

BEFORE THE  
PUBLIC SERVICE COMMISSION OF WISCONSIN

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Application of Wisconsin Public Service Corporation  
for Authority To Adjust Electric and Natural  
Gas Rates— Test Year 2020

Docket No. 6690-UR-126

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DIRECT TESTIMONY OF ANN E. BULKLEY

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1    **I.    INTRODUCTION AND QUALIFICATIONS**

2    **Q.    Please state your name and business address.**

3    A.    My name is Ann E. Bulkley. My business address is Concentric Energy Advisors, Inc.  
4           (“Concentric”), 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts  
5           01752.

6    **Q.    What is your position with Concentric?**

7    A.    I am employed by Concentric as a Senior Vice President.

8    **Q.    On whose behalf are you submitting this Direct Testimony?**

9    A.    I am submitting this Direct Testimony on behalf of Wisconsin Public Service Corporation  
10           (“Wisconsin Public Service”, “WPSC”, or the “Company”), which is a wholly-owned  
11           subsidiary of WEC Energy Group, Inc. (“WEC”).

12   **Q.    Please describe your education and experience.**

13   A.    I hold a Bachelor’s degree in Economics and Finance from Simmons College and a  
14           Master’s degree in Economics from Boston University, with more than 20 years of  
15           experience consulting to the energy industry. I have advised numerous energy and utility  
16           clients on a wide range of financial and economic issues with primary concentrations in  
17           valuation and utility rate matters. Many of these assignments have included the

determination of the cost of capital for valuation and ratemaking purposes. I have included my resume in Ex.-WPSC-Bulkley-1.

**Q. Please describe Concentric’s activities in energy and utility engagements.**

A. Concentric provides financial and economic advisory services to many and various energy and utility clients across North America. Our regulatory, economic, and market analysis services include utility ratemaking and regulatory advisory services; energy market assessments; market entry and exit analysis; corporate and business unit strategy development; demand forecasting; resource planning; and energy contract negotiations. Our financial advisory activities include buy and sell-side merger, acquisition and divestiture assignments; due diligence and valuation assignments; project and corporate finance services; and transaction support services. In addition, we provide litigation support services on a wide range of financial and economic issues on behalf of clients throughout North America.

**Q. Have you testified before any regulatory authorities?**

A. Yes. A list of proceedings in which I have provided testimony and summary of that testimony is provided in Ex.-WPSC-Bulkley-1.

## **II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY**

**Q. What is the purpose of your Direct Testimony?**

A. The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the appropriate Return on Equity (“ROE”)<sup>1</sup> for the Company’s electric and natural gas utility operations in Wisconsin and to provide an assessment of its proposed capital structure to be used for ratemaking purposes. My

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<sup>1</sup> Throughout my Direct Testimony, I interchangeably use the terms “ROE” and “cost of equity”.

1 analyses and recommendations are supported by the data presented in Exhibits Ex.-  
2 WPSC-Bulkley-2 through Ex.-WPSC-Bulkley-14, which were prepared by me or under  
3 my direction.

4 **Q. Please provide a brief overview of the analyses that led to your ROE**  
5 **recommendation.**

6 A. As discussed in more detail in the remainder of my Direct Testimony, it is important to  
7 consider the results of several analytical approaches in determining a reasonable  
8 recommendation for the Company's ROE. To develop my ROE recommendation, I  
9 applied the Constant Growth forms of the Discounted Cash Flow ("DCF") model, the  
10 Capital Asset Pricing Model ("CAPM") and the Risk Premium Approach. My  
11 recommendation also takes into consideration: (1) the Company's capital expenditure  
12 requirements; (2) the regulatory environment in which the Company operates; (3) the  
13 Company's adjustment mechanisms; (4) the Company's customer concentration risk; and  
14 (5) the fuel sources of the Company's generation portfolio. Finally, I considered the  
15 Company's proposed capital structure as compared to the capital structures of the proxy  
16 companies.<sup>2</sup> While I did not make any specific adjustments to my ROE estimates for any  
17 of these factors, I did take them into consideration in aggregate when determining where  
18 the Company's ROE falls within the range of analytical results.

19 **Q. What is your recommendation with respect to the ROE and equity ratio?**

20 A. Based on the results of the traditional ROE estimation models, the review of current and  
21 prospective market conditions and the business risks discussed in the remainder of my  
22 testimony, I conclude that a reasonable range for the ROE for Wisconsin Public Service

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<sup>2</sup> The selection and purpose of developing a group of comparable companies will be discussed in detail in Section VI of my Direct Testimony.

1 is between 10.00 percent and 10.75 percent. Within that range, I believe that a ROE of  
2 10.35 percent for Wisconsin Public Service is reasonable and appropriate.

3 In order to determine the reasonableness of the Company's proposed equity ratio, I have  
4 reviewed the equity ratios of the utility subsidiary operating companies of the proxy  
5 companies. In addition, I have considered the trends in the industry and the effects of the  
6 Tax Cuts and Jobs Act ("TCJA") on utility credit metrics. Based on this information, I  
7 conclude that an equity ratio of 51.46 percent is reasonable.

8 **Q. How is the remainder of your Direct Testimony organized?**

9 A. Section III provides a summary of my analyses and conclusions. Section IV reviews the  
10 regulatory guidelines pertinent to the development of the cost of capital. Section V  
11 discusses current and projected capital market conditions and the effect of those  
12 conditions on Wisconsin Public Service's cost of equity. Section VI explains my  
13 selection of a proxy group of combination gas and electric utilities. Section VII describes  
14 my analyses and the analytical basis for the recommendation of the appropriate ROE for  
15 Wisconsin Public Service. Section VIII provides a discussion of specific regulatory,  
16 business, and financial risks that have a direct bearing on the ROE to be authorized for  
17 Wisconsin Public Service in this case. Section IX assesses the proposed capital structures  
18 of Wisconsin Public Service as compared with the capital structures of the utility  
19 operating subsidiaries of the proxy group companies. Section X presents my conclusions  
20 and recommendations for the market cost of equity.

1 **III. SUMMARY OF ANALYSIS AND CONCLUSIONS**

2 **Q. Please summarize the key factors considered in your analyses and upon which you**  
3 **base your recommended ROE.**

4 A. My analyses and recommendations considered the following:

- 5 • The *Hope* and *Bluefield* decisions<sup>3</sup> that established the standards for determining a  
6 fair and reasonable allowed ROE, including consistency of the allowed return  
7 with other businesses having similar risk, adequacy of the return to provide access  
8 to capital and support credit quality, and that the result must lead to just and  
9 reasonable rates.
- 10 • The effect of current and projected capital market conditions on investors' return  
11 requirements.
- 12 • The Company's regulatory, business, and financial risks relative to the proxy  
13 group of comparable companies and the implications of those risks in arriving at  
14 the appropriate ROE for Wisconsin Public Service.

15 **Q. Please explain how you considered those factors.**

16 A. I have relied on several analytical approaches to estimate the Company's cost of equity  
17 based on a proxy group of publicly traded companies. As shown in Figure 1, those ROE  
18 estimation models produce a wide range of results. My conclusion as to where within that  
19 range of results Wisconsin Public Service's ROE falls is based on the Company's  
20 business and financial risk relative to the proxy group. Although the companies in my  
21 proxy group are generally comparable to Wisconsin Public Service, each company is  
22 unique and no two companies have the exact business and financial risk profiles.  
23 Accordingly, we settle on a proxy group with similar risk profiles; and adjust the results

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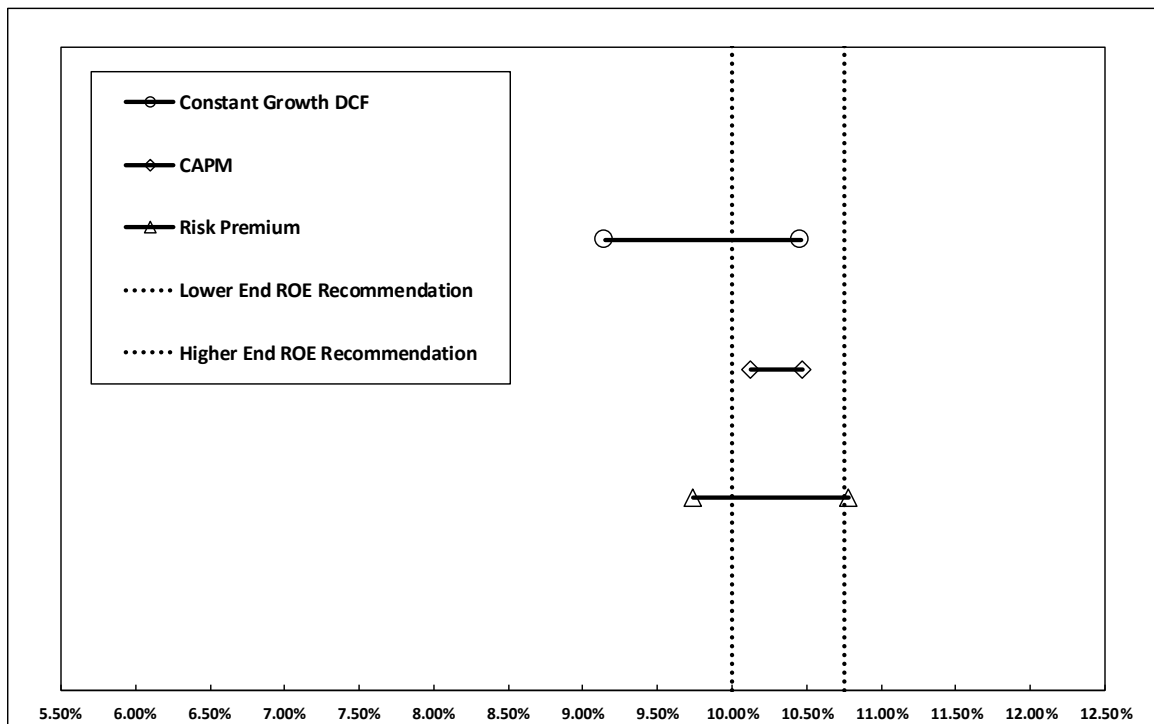
<sup>3</sup> Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944); Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia, 262 U.S. 679 (1923).

1 of our analysis either upwards or downwards to account for any residual differences in  
2 risk.

3 **Q. Please summarize the ROE estimation models that you considered to establish the**  
4 **range of ROEs for Wisconsin Public Service.**

5 A. I considered the results of the Constant Growth DCF model using current dividends,  
6 earnings growth rates and stock prices. In addition, I considered two risk premium  
7 approaches: the CAPM and a Bond Yield Plus Risk Premium methodology. Figure 1  
8 summarizes the range of results established using each of these estimation  
9 methodologies.

**Figure 1: Summary of Cost of Equity Analytical results for Wisconsin Public Service<sup>4</sup>**



As shown on Figure 1 (and in Ex.-WPSC-Bulkley-2), the range of the DCF model results is wide, particularly in relation to the results of the other methodologies. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results of one of the models is especially wide.

The requested ROE is for the future rate period; therefore, the analyses supporting my recommendation rely on forward-looking inputs and assumptions (e.g., projected growth rates in the DCF model, forecasted risk-free rate of return and Market Risk Premium in the CAPM analysis, etc.) and takes into consideration the current high valuations of utility stocks and the market's expectation for higher interest rates. The use of historical inputs and assumptions would tend to understate the required ROE for Wisconsin Public

<sup>4</sup> The analytical results reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

1 Service, when considering the effect of market conditions on those inputs and  
2 assumptions.

3 As discussed in more detail in Sections V and VII, the DCF models are influenced by  
4 current market conditions that are not expected to prevail in the long-term. Those  
5 conditions result in lower estimates of the ROE using the DCF model. For example, the  
6 median low Constant Growth DCF<sup>5</sup> results (prior to exclusions for outliers) for the proxy  
7 group, ranging from 8.91 to 9.02 percent for the 30-, 90-, and 180-day assumption, are  
8 below an acceptable range of returns for an electric utility and are below any authorized  
9 ROE for an integrated electric utility in the U.S. since at least 1980.<sup>6</sup> Based on  
10 prospective capital market conditions, and the inverse relationship between the market  
11 risk premium and interest rates, I conclude that the median low DCF results do not  
12 provide a sufficient risk premium to compensate equity investors for the residual risks of  
13 ownership, including the risk that they have the lowest claim on the assets and income of  
14 Wisconsin Public Service.

15 Due to these concerns about the results produced by the DCF model, my ROE  
16 recommendation considers the median and median-high results of the DCF model, a  
17 forward-looking CAPM analysis, and a Bond Yield plus Risk Premium analysis. I also  
18 consider company-specific risk factors and current and prospective capital market  
19 conditions.

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<sup>5</sup> My DCF models generated a median low, median, and median high result. The median low result is the median of the proxy group DCF results calculated using the lowest earnings growth rate for each company from Value Line, Yahoo! Finance or Zacks.

<sup>6</sup> Regulatory Research Associates, Rate Case History (Integrated Electric Utility) January 1, 1980 – January 31, 2019.



1   **Q.     What is your recommended ROE for Wisconsin Public Service?**

2   A.     In addition to the analytical results presented in Figure 1, I also considered the level of  
3           regulatory, business, and financial risk faced by the Company relative to the proxy group  
4           to establish the range of reasonable returns. Considering these factors, I believe a range  
5           from 10.00 to 10.75 percent is reasonable. This recommendation reflects the range of  
6           results for the proxy group companies, the relative risk of Wisconsin Public Service as  
7           compared to the proxy group, and current capital market conditions. Within that range, a  
8           return of 10.35 percent is reasonable.

9   **Q.     Please summarize the analysis you conducted in determining that Wisconsin Public**  
10   **Service's requested capital structure is reasonable and appropriate.**

11  A.     Based on the analysis presented in Section IX of my testimony, I conclude that a 51.46  
12           percent common equity ratio is reasonable and appropriate for Wisconsin Public Service.  
13           To determine if Wisconsin Public Service's requested capital structure was reasonable, I  
14           reviewed the capital structures of the utility subsidiaries of the proxy companies. As  
15           shown in Ex.-WPSC-Bulkley-13, the results of that analysis demonstrate that the average  
16           equity ratios for the utility operating companies of the proxy group range from 46.27  
17           percent to 54.97 percent. An equity ratio of 51.46 is in the range established by the proxy  
18           group. As discussed in more detail in the Direct Testimony of Mr. Todd Shipman,  
19           Federal tax reform has resulted in weakening of utility cash flow and credit metrics that  
20           has led utilities to increase equity issuances in 2018. Considering this trend and the range  
21           established by the equity ratios of the proxy companies, I conclude that the proposed  
22           equity ratio for Wisconsin Public Service is reasonable.

1 **IV. REGULATORY GUIDELINES**

2 **Q. Please describe the guiding principles to be used in establishing the cost of capital**  
3 **for a regulated utility.**

4 A. The United States Supreme Court's *Hope* and *Bluefield* cases established the standards  
5 for determining the fairness or reasonableness of a utility's allowed ROE. Among the  
6 standards established by the Court in those cases are: (1) consistency with other  
7 businesses having similar or comparable risks; (2) adequacy of the return to support  
8 credit quality and access to capital; and (3) that the result, as opposed to the methodology  
9 employed, is the controlling factor in arriving at just and reasonable rates.<sup>7</sup>

10 **Q. Has the Commission provided similar guidance in establishing the appropriate**  
11 **return on common equity?**

12 A. Yes, it has. For example, in Northern States Power Company-Wisconsin's test year 2018  
13 rate case, the Commission provided an overview of its standards for setting ROE:

14 The principal factor used to determine the appropriate return on  
15 equity is the investors' required return. Authorized returns less than  
16 the investors' required return would fail to compensate capital  
17 providers for the risks they face when providing funds to the utility.  
18 Such sub-par returns would make it difficult for a utility to raise  
19 capital on an ongoing basis. On the other hand, authorized returns  
20 that exceed the investors' required return would provide windfalls to  
21 utility investors as they would receive returns that are in excess of  
22 reasonable expectations.<sup>8</sup>

23 This guidance is in accordance with my view that an allowed rate of return must be  
24 sufficient to enable regulated companies, like Wisconsin Public Service, the ability to  
25 attract capital on reasonable terms.

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<sup>7</sup> *Hope*, 320 U.S. 591 (1944); *Bluefield*, 262 U.S. 679 (1923).

<sup>8</sup> Final Decision at 29-30, PSCW Docket No. 4220-UR-123 (Dec. 21, 2017).

1   **Q.    Why is it important for a utility to be allowed the opportunity to earn an ROE that**  
2       **is adequate to attract capital at reasonable terms?**

3    A.    An ROE that is adequate to attract capital at reasonable terms enables the Company to  
4       continue to provide safe, reliable electric, and gas service while maintaining its financial  
5       integrity. To the extent the Company is provided the opportunity to earn its market-based  
6       cost of capital, neither customers nor shareholders are disadvantaged.

7   **Q.    Is a utility's ability to attract capital also affected by the ROEs that are authorized**  
8       **for other utilities?**

9    A.    Yes. Utilities compete directly for capital with other investments of similar risk, which  
10       include other natural gas and electric utilities. Therefore, the ROE authorized for a utility  
11       sends an important signal to investors regarding whether there is regulatory support for  
12       financial integrity, dividends, growth, and fair compensation for business and financial  
13       risk. The cost of capital represents an opportunity cost to investors. If higher returns are  
14       available for other investments of comparable risk, investors have an incentive to direct  
15       their capital to those investments. Thus, an authorized ROE significantly below  
16       authorized ROEs for other natural gas and electric utilities can inhibit the utility's ability  
17       to attract capital for investment in Wisconsin.

18       Likewise, because Wisconsin Public Service is a subsidiary of WEC, the Company  
19       competes with the other WEC subsidiaries for investment capital. These include utilities  
20       regulated by other state commissions, including Michigan, Illinois, and Minnesota. In  
21       determining how to allocate its finite capital resources, it would be reasonable for WEC  
22       to consider the authorized ROE of each of its subsidiaries.

1   **Q.    What are your conclusions regarding regulatory guidelines?**

2    A.    The ratemaking process is premised on the principle that, for investors and companies to  
3           commit the capital needed to provide safe and reliable utility services, a utility must have  
4           the opportunity to recover the return of, and the market-required return on, its invested  
5           capital. Because utility operations are capital-intensive, regulatory decisions should  
6           enable the utility to attract capital at reasonable terms under a variety of economic and  
7           financial market conditions; doing so balances the long-term interests of the utility and its  
8           ratepayers.

9           The financial community carefully monitors the current and expected financial condition  
10          of utility companies, and the regulatory framework in which they operate. In that respect,  
11          the regulatory framework is one of the most important factors in both debt and equity  
12          investors' assessments of risk. The Commission's order in this proceeding, therefore,  
13          should establish rates that provide the Company with the opportunity to earn an ROE that  
14          is: (1) adequate to attract capital at reasonable terms under a variety of economic and  
15          financial market conditions; (2) sufficient to ensure good financial management and firm  
16          integrity; and (3) commensurate with returns on investments in enterprises with similar  
17          risk. To the extent Wisconsin Public Service is authorized the opportunity to earn its  
18          market-based cost of capital, the proper balance is achieved between customers' and  
19          shareholders' interests.

1 **V. CAPITAL MARKET CONDITIONS**

2 **Q. Why is it important to analyze capital market conditions?**

3 A. The ROE estimation models rely on market data that are either specific to the proxy  
4 group, in the case of the DCF model, or to the expectations of market risk, in the case of  
5 the CAPM. The results of the ROE estimation models can be affected by prevailing  
6 market conditions at the time the analysis is performed. While the ROE that is established  
7 in a rate proceeding is intended to be forward-looking, the analyst uses current and  
8 projected market data, specifically stock prices, dividends, growth rates and interest rates  
9 in the ROE estimation models to estimate the required return for the subject company.

10 As is discussed in the remainder of this section, a number of analysts and regulatory  
11 commissions have concluded that current market conditions are anomalous and that these  
12 conditions have affected the results of the ROE estimation models. As a result, it is  
13 important to consider the effect of these conditions on the ROE estimation models when  
14 determining the appropriate range and recommended ROE for a future period. If  
15 investors do not expect current market conditions to be sustained in the future, the ROE  
16 estimation models will not provide an accurate estimate of investors' required return  
17 during that rate period. Therefore, it is very important to consider projected market data  
18 to estimate the return for that forward-looking period to the extent that such data are  
19 available.

20 **Q. What factors are affecting the cost of equity for regulated utilities in the current and**  
21 **prospective capital markets?**

22 A. The cost of equity for regulated utility companies is being affected by several factors in  
23 the current and prospective capital markets, including: (1) the current low interest rate

environment and the corresponding effect on valuations and dividend yields of utility stocks relative to historical levels; (2) the market's expectation for higher interest rates; and (3) recent Federal tax reform. In this section, I discuss each of these factors and how it affects the models used to estimate the cost of equity for regulated utilities.

#### **A. The Effect of Market Conditions on Valuations**

**Q. How has the Federal Reserve's monetary policy affected capital markets in recent years?**

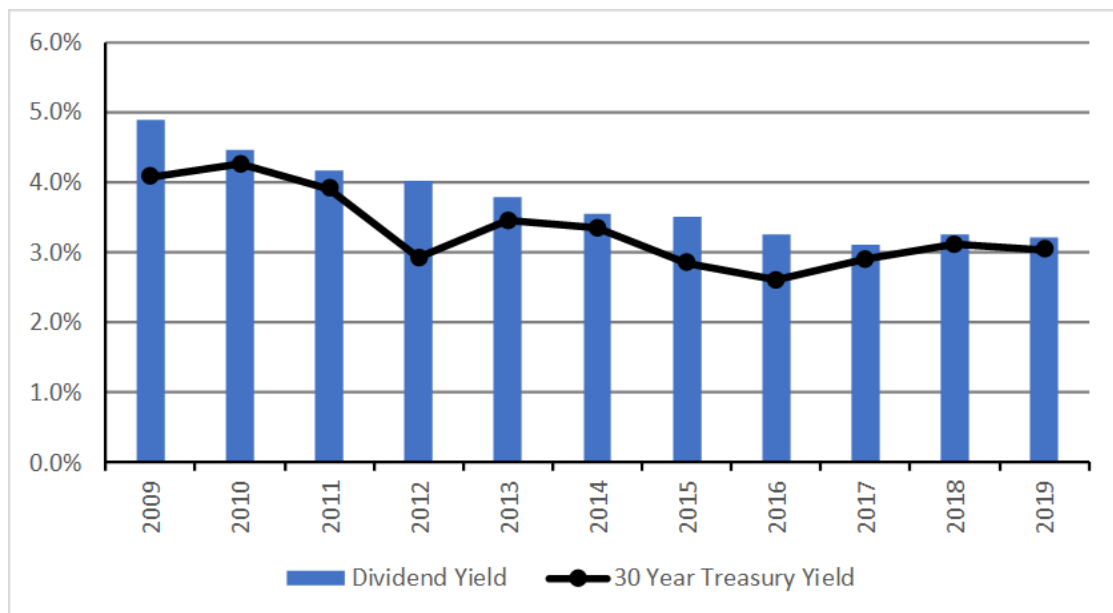
A. Extraordinary and persistent federal intervention in capital markets artificially lowered government bond yields after the Great Recession of 2008-2009, as the Federal Open Market Committee ("FOMC") used monetary policy (both reductions in short-term interest rates and purchases of Treasury bonds and mortgage-backed securities) to stimulate the U.S. economy. As a result of very low or zero returns on short-term government bonds, yield-seeking investors have been forced into longer-term instruments, bidding up prices and reducing yields on those investments. As investors have moved along the risk spectrum in search of yields that meet their return requirements, there has been increased demand for dividend-paying equities, such as natural gas and electric utility stocks.

**Q. How has the period of abnormally low interest rates affected the valuations and dividend yields of utility shares?**

A. The Federal Reserve's accommodative monetary policy has caused investors to seek alternatives to the historically low interest rates available on Treasury bonds. A result of this search for higher yield is that the share prices for many common stocks, especially dividend-paying stocks such as utilities, have been driven higher while the dividend

yields (which are computed by dividing the dividend payment by the stock price) have decreased to levels well below the historical average. As shown in Figure 2, over the period from 2009 through 2017, since the Federal Reserve intervened to stabilize financial markets and support the economic recovery after the Great Recession of 2008-09, Treasury bond yields and utility dividend yields declined. Specifically, Treasury bond yields declined by approximately 118 basis points, and utility dividend yields have decreased by about 179 basis points over this same period. However, both Treasury bond yields and dividend yields have increased since 2017. As of January 31, 2019, the yield on 30-year Treasury bonds were 3.04 percent and dividend yields had increased approximately 11 basis points from end-of-year 2017 level of 3.10 percent to 3.21 percent. It is important to note that while there has been a slight increase, dividend yields are still below their historical average over the past decade.

**Figure 2: Dividend Yields for Electric and Natural Gas Utility Stocks**



Note: Figure includes 2019 data through January 31, 2019.

Source: Bloomberg Professional

1 **Q. How have higher stock valuations and lower dividend yields for utility companies**  
2 **affected the results of the DCF model?**

3 A. During periods of general economic and capital market stability, the DCF model may  
4 adequately reflect market conditions and investor expectations. However, in the current  
5 market environment, the DCF model results are distorted by the historically low level of  
6 interest rates and the higher valuation of utility stocks. Value Line recently commented  
7 on the high valuations of electric utilities:

8 Even after a pullback in late 2018, most stocks in the Electric Utility  
9 Industry are still priced expensively, in our view. Many of the  
10 equities are still trading within our 2021-2023 Target Price Range.  
11 The industry's average dividend yield is 3.5%, and some stocks have  
12 yields that aren't significantly higher than the median of all stocks  
13 under our coverage. For the 3- to 5-year period, the group's average  
14 total return potential is just 5%.<sup>9</sup>

15 This is further supported by a recent Edward Jones report on the utility sector:

16 Utility valuations have come down as 10-year Treasury bond rates  
17 have climbed back over 3%. On a price-to-earnings basis, they do  
18 remain significantly above their historical average, but have declined  
19 to less unreasonable levels. We have seen utility valuations moving  
20 in line with interest rate movements, although there have been  
21 exceptions to this. Overall, however, we believe the low-interest rate  
22 environment has been the biggest factor in pushing utilities higher  
23 since many investors buy them for their dividend yield.

24 Utilities have declined from their all-time highs reached late in 2017,  
25 but are still trading significantly above their average price-to-  
26 earnings ratio over the past decade. The premium valuation  
27 continues to reflect not only the low interest rate environment, but  
28 also the stable and predominantly regulated earnings growth we  
29 foresee.<sup>10</sup>

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<sup>9</sup> Value Line Investment Survey, Electric Utility (West) Industry, at 2217 (Jan. 25, 2019).

<sup>10</sup> Andy Pusateri and Andy Smith, Edward Jones, Utilities Sector Outlook, at 2-3 (Jan. 16, 2019)(Reference to figure omitted).

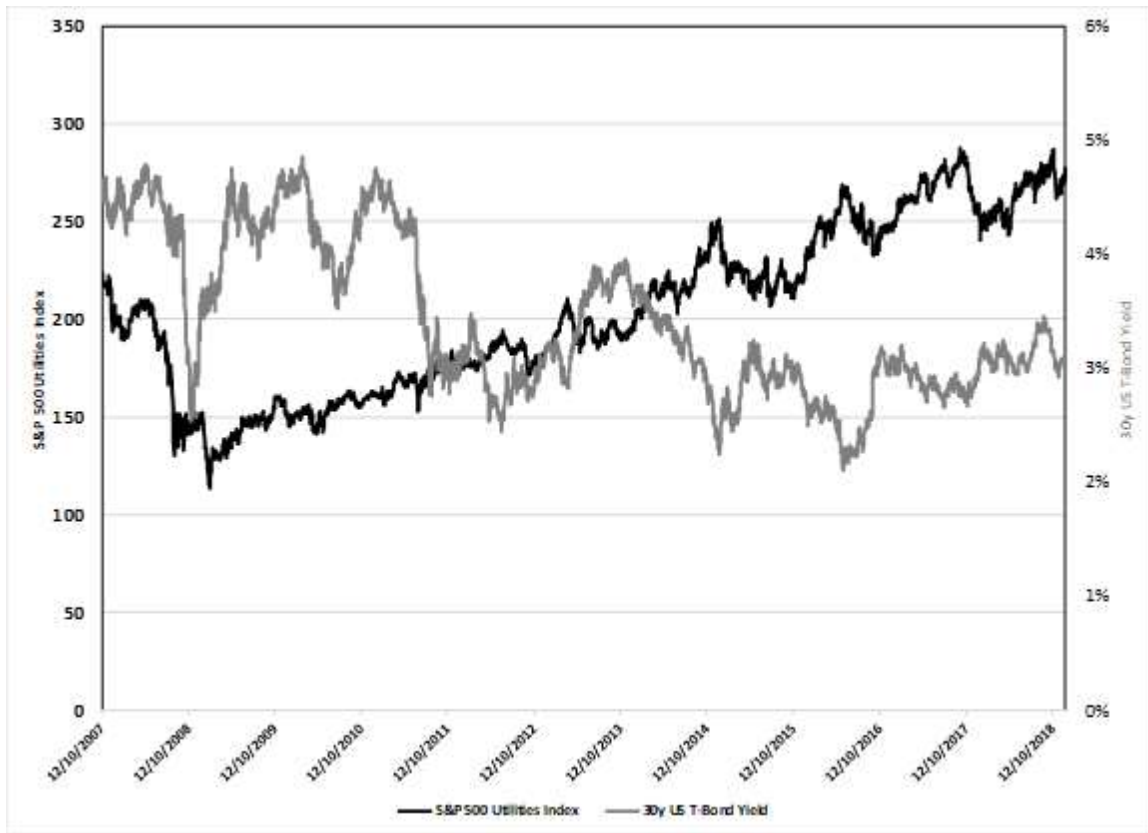


1 As noted by Value Line and Edward Jones, over the last few years, utility stocks have  
2 experienced high valuations and low dividend yields; driven by investors moving into  
3 dividend paying stocks from bonds due to the low interest rates in the bond market,  
4 however, those dynamics are changing. Value Line and Edward Jones recognize that as  
5 interest rates increase, bonds become a substitute for utility stocks. As utility stock prices  
6 decline, the dividend yields will increase. This change in market conditions implies that  
7 the ROE calculated using historical market data in the DCF model will likely understate  
8 the forward-looking cost of equity.

9 **Q. How did the Standard & Poor's ("S&P") Utilities Index respond to the market**  
10 **conditions that existed following the Great Recession of 2008-2009?**

11 A. Figure 3, demonstrates market conditions from 2007-2019 as measured by the S&P  
12 Utilities index and the yield on 30-year Treasury bonds. As shown in Figure 3, the S&P  
13 Utilities index increased steadily from the beginning of 2009 through early November  
14 2017, as yields on 30-year Treasury bonds declined in response to accommodative  
15 federal monetary policy.

**Figure 3: S&P Utilities Index and U.S. Treasury Bond Yields (2007-2019)**



Source: Bloomberg Professional

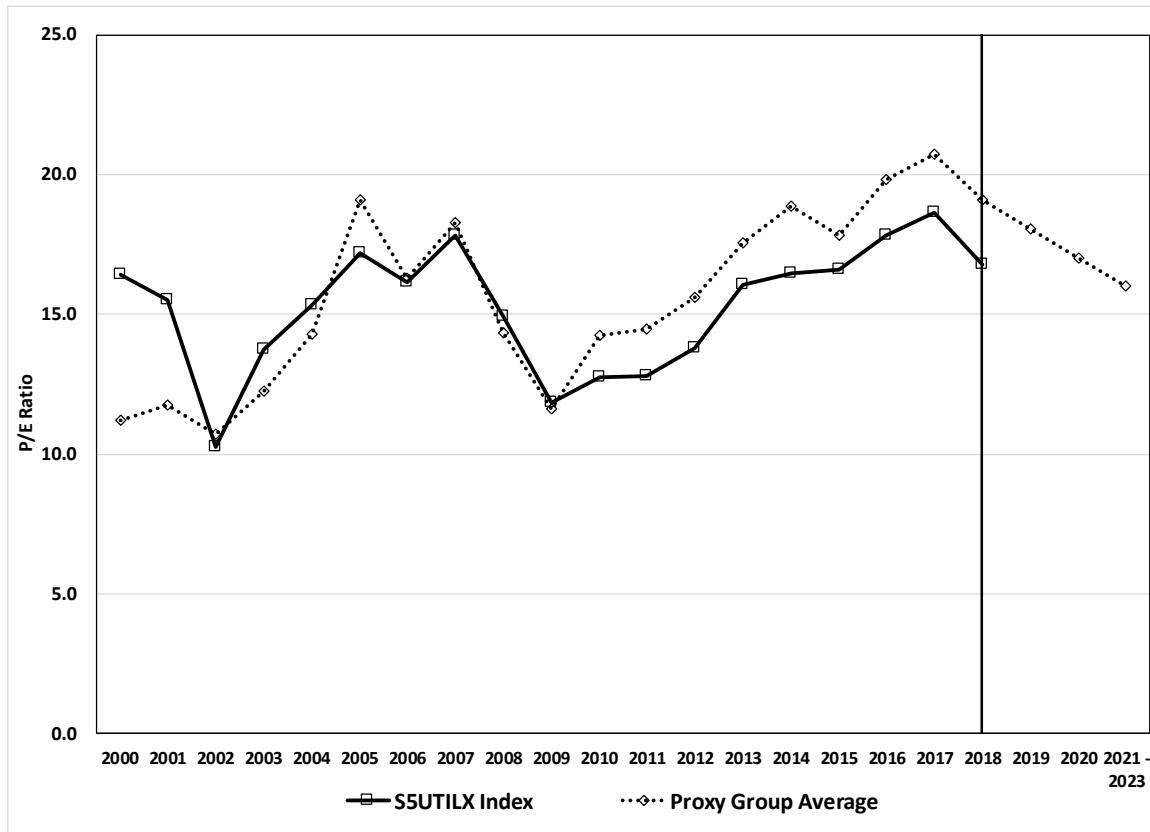
**Q. How do the valuations of public utilities compare to the historical average?**

A. Figure 4 summarizes the average historical and projected P/E ratios for the proxy companies calculated using data from Bloomberg Professional and Value Line.<sup>11</sup> As shown in Figure 4, the average P/E ratio for the proxy companies was higher in 2017 than at any other time in the last seventeen years and is significantly higher than the average projected P/E ratio for the group for the period from 2021-2023. In 2018 however, the average P/E ratio for the proxy companies has decreased slightly to 19.07 from the high in 2017 of 20.74. All else equal, if P/E ratios for the proxy companies continue to decline, as Value Line projects, the ROE results from the DCF model would be higher. Therefore,

<sup>11</sup> Selection of the Proxy Companies is discussed in detail in Section VI of my Direct Testimony.

the DCF model using historical market data is likely understating the forward-looking cost of equity for the proxy group companies.

**Figure 4: Average Historical Proxy Group P/E Ratios**



Note: Figure includes data through January 31, 2019.

Source: Bloomberg Professional

**Q. How do equity investors view the utilities sector based on these recent market conditions?**

A. Investment advisors have noted the underperformance of utility stocks as a result of current and future market conditions. Barron's recently published its seventh annual review of income-producing investments in which Barron's ranked eleven different sectors based on projected performance in 2019. The utility sector ranked ninth out of the eleven sectors with Barron's noting that:

Utilities, however, aren't cheap; they are valued at an average of 17 times projected 2019 earnings, a premium to the S&P 500, at about

1 14. That may make it hard for utilities to best the index in 2019,  
2 barring a market collapse. Earnings growth is running at a mid-  
3 single-digits yearly pace.<sup>12</sup>

4 Similarly, a recent report on the market outlook for 2019 from J.P. Morgan Asset

5 Management noted:

6 As prospects for slower economic growth become clearer in the  
7 middle of next year, the Fed may signal it will pause. Such a signal,  
8 or a trade agreement with China, could lead multiples to expand,  
9 pushing the stock market higher and potentially adding years to this  
10 already old bull market. However, even if the bull market does end  
11 in the next few years, it is important to remember that late-cycle  
12 returns have typically been quite strong.

13 This leaves investors in a tough spot – should they focus on a  
14 fundamental story that is softening, or invest with an expectation that  
15 multiples will expand as the bull market runs its course? The best  
16 answer is probably a little bit of each. We are comfortable holding  
17 stocks as long as earnings growth is positive, but do not want to be  
18 over-exposed given an expectation for higher volatility. As such,  
19 higher-income sectors like financials and energy look more attractive  
20 than technology and consumer discretionary, and we would lump the  
21 new communication services sector in with the latter names, rather  
22 than the former. However, given our expectation of still some further  
23 interest rate increases, it does not yet seem appropriate to fully rotate  
24 into defensive sectors like utilities and consumer staples. Rather, a  
25 focus on cyclical value should allow investors to optimize their  
26 upside/downside capture as this bull market continues to age.<sup>13</sup>

27 This view was further supported by UBS who noted that:

28 Our underweight views on consumer staples and utilities sectors  
29 reflect our preference for sectors that are more leveraged to  
30 continued favorable economic growth than these two defensive  
31 sectors. In addition, consumer staples are contending with sluggish  
32 organic growth. High dividend yields for the utilities sector makes it  
33 most negatively exposed to higher interest rates. Our industrials

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<sup>12</sup> Andrew Bary, *Best Income Investments for 2019*, Barron's (Jan. 4, 2019), [www.barrons.com/articles/the-best-income-ideas-for-2019-51546632171](http://www.barrons.com/articles/the-best-income-ideas-for-2019-51546632171).

<sup>13</sup> J.P. Morgan Asset Management, *The investment outlook for 2019: Late-cycle risks and opportunities*, at 5 (Nov. 30, 2018).

1 underweight is a bit of a hedge against a potential increase in trade  
2 frictions.<sup>14</sup>

3 **Q. Have regulators recently responded to the historically low dividend yields for utility**  
4 **companies and the corresponding effect on the DCF model?**

5 A. Yes. As I discuss in more detail later in my testimony, the Federal Energy Regulatory  
6 Commission (“FERC”) has determined that anomalous capital market conditions have  
7 caused the DCF model to understate equity costs for regulated utilities at this time.<sup>15</sup>

8 In addition, the Illinois Commerce Commission (“ICC”), the Pennsylvania Public Utility  
9 Commission (“PPUC”) and the Missouri Public Service Commission (“Missouri PSC”)  
10 have all considered this phenomenon in recent decisions. I discuss the response of these  
11 regulators to historically low dividend yields and the impact on the DCF model in detail  
12 later in my testimony.

13 **Q. Are there other indications that market conditions changed in 2018?**

14 A. Yes, there is evidence that investors’ perception of utility risk has increased. As shown in  
15 Figure 5, credit spreads between Treasury bonds and utility bonds have increased since  
16 February 2018, which was the lowest level of credit spreads since before the Great  
17 Recession of 2008-2009. Since reaching a low point on February 6, 2018, the spread  
18 between Baa-rated utility debt and Treasury bonds has increased by 57 basis points, while

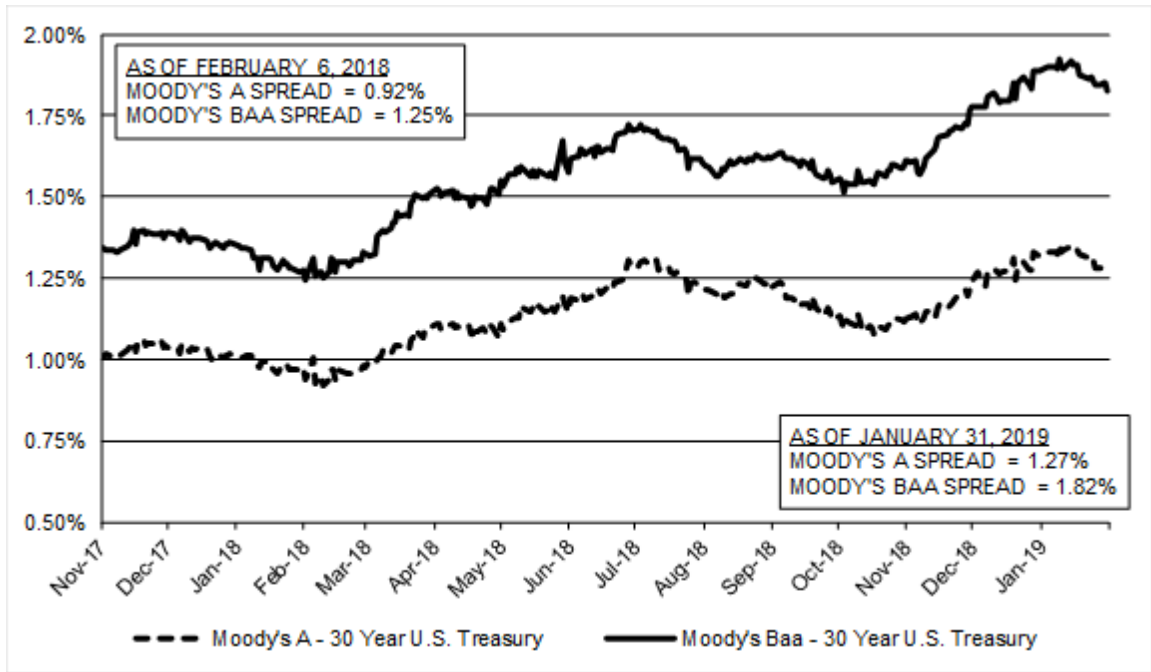
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<sup>14</sup> UBS, 2019 outlook: Aging gracefully, at 7 (Dec. 5, 2018).

<sup>15</sup> FERC Docket No. EL11-66-001, Opinion No. 531 (June 19, 2014), footnote 286. While Opinion No. 531 was recently remanded to FERC by the D.C. Circuit Court, that decision did not question the finding by FERC that capital market conditions were anomalous. Additionally, the methodologies that were relied on by FERC to establish the range have not been challenged. *See also* FERC Docket No. EL 11-66-001, et al., Order Directing Briefs, issued October 16, 2018, at para. 32. This Order develops a proposed methodology to address the issues that were remanded to FERC. The proposed methodology includes an equal weighting of the DCF, CAPM, Expected Earnings and Risk Premium models to better reflect investor behavior and capital market conditions.

the spread between A-rated utility debt and Treasury bonds has increased by 35 basis points.

**Figure 5: Credit Spreads – February 2018 – January 2019<sup>16</sup>**



Rising credit spreads indicate that investors are requiring a higher risk premium to compensate them for the additional credit risk associated with lower-rated utility debt. The higher required risk premium is the result of increased uncertainty in the market, which has reduced investor confidence. As Bloomberg notes:

Corporate bond spreads have been widening since February, when they reached the tightest since before the financial crisis. Fewer foreign buyers, rate volatility and trade tensions are chipping away at investor confidence in the U.S. market, according to Thomas Murphy, a portfolio manager at Columbia Threadneedle Investments in Minneapolis.

“A lot of people pushed into our market because of QE overseas. They can now go back to their home markets. Hedging costs have gone up dramatically,” said Murphy, whose firm has about \$172 billion of fixed-income assets under management. There are also

<sup>16</sup> Bloomberg Professional.

1 “concerns about rate volatility and concerns on the curve shape  
2 changing,” he added.<sup>17</sup>

3 **B. The Current and Expected Interest Rate Environment**

4 **Q. What evidence is there that the interest rate environment is shifting?**

5 A. Based on stronger conditions in employment markets, a relatively stable inflation rate,  
6 steady economic growth, and increased household spending, the Federal Reserve raised  
7 the short-term borrowing rate by 25 basis points on four occasions in 2018. Since  
8 December 2015, the Federal Reserve has increased interest rates nine times, bringing the  
9 federal funds rate to the range of 2.25 percent to 2.50 percent. As the economy continues  
10 to expand, the Federal Reserve is expected to continue increasing short-term interest rates  
11 to sustain the desired balance between unemployment and consumer price inflation. The  
12 Federal Reserve has indicated that it is likely to raise short-term interest rates in 25 basis  
13 point increments twice in 2019.<sup>18</sup> In late January 2019, the Federal Reserve somewhat  
14 tempered its stance on monetary policy, with Chair Powell indicating that the central  
15 bank would be “patient” and that the pace of future increases in short-term interest rates  
16 would be dependent on economic data.  
17 Furthermore, in October 2017, the FOMC started reducing the size of the Fed’s \$4.5  
18 trillion bond portfolio by no longer reinvesting the proceeds of the bonds it holds. In  
19 response to the Great Recession, the Fed pursued a policy known as “Quantitative  
20 Easing,” in which it systematically purchased mortgage-backed securities and long-term  
21 Treasury bonds to provide liquidity in financial markets and drive down yields on long-

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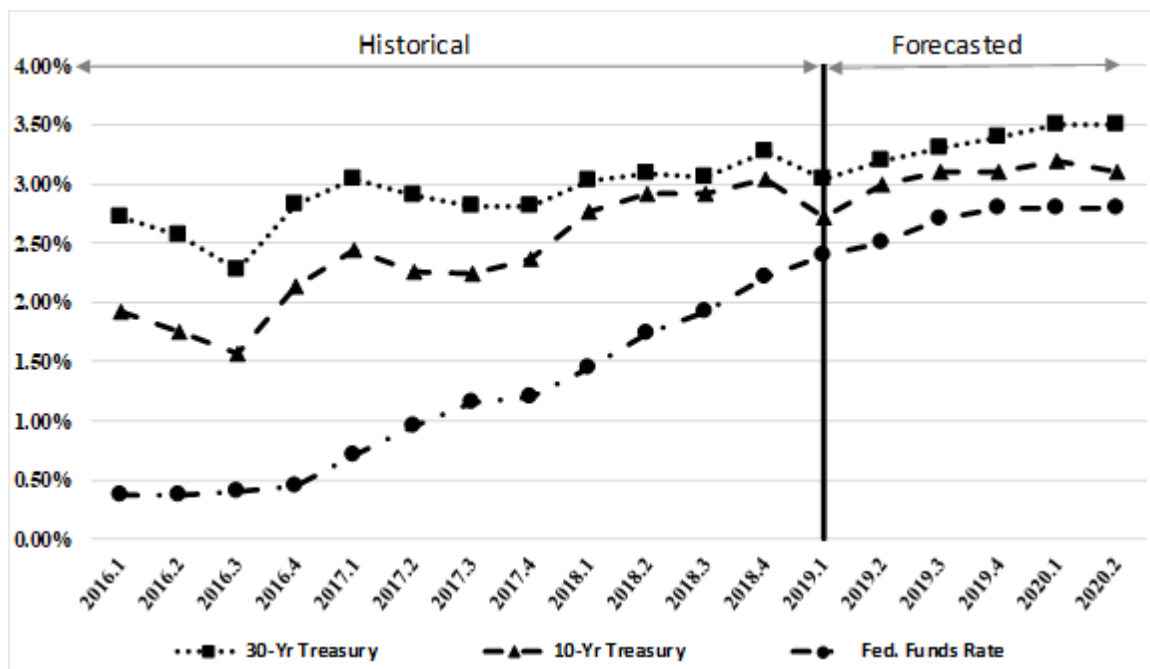
<sup>17</sup> Shelly Hagan, *Corporate Bond Spreads Jump to 16-Month High*, Bloomberg.com (June 22, 2018), [www.bloomberg.com/news/articles/2018-06-22/corporate-bond-spreads-jump-to-16-month-high-amid-growing-supply](http://www.bloomberg.com/news/articles/2018-06-22/corporate-bond-spreads-jump-to-16-month-high-amid-growing-supply).

<sup>18</sup> Economic Projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy, December 2018, at 3.

term government bonds. Although the Federal Reserve discontinued the Quantitative Easing program in October 2014, it continued to reinvest the proceeds from the bonds it holds. Under the new policy, the FOMC intends to gradually reduce the Federal Reserve's securities holdings by \$10 billion per month initially, ramping up to \$50 billion per month by the end of the first twelve months.<sup>19</sup> The Federal Reserve's announced unwinding plan provides additional support for investors' view that long-term interest rates will increase, as the Federal Reserve gradually reverses the Quantitative Easing program that reduced those long-term rates.

Investors are expecting continued increases in interest rates on government bonds over the next few years, as shown in Figure 6.

**Figure 6: Interest Rate Conditions<sup>20</sup>**



<sup>19</sup> Federal Reserve press release, Addendum to the Policy Normalization Principles and Plans, June 14, 2017, implemented at FOMC meeting, September 20, 2017.

<sup>20</sup> Historical data from Bloomberg Professional. Forecast data from Blue Chip Financial Forecasts, Volume. 38, No. 2, at 2 (Feb. 1, 2019).



1 For these reasons the context for setting the authorized ROE for Wisconsin Public  
2 Service should not be the low interest rate environment of the last few years. Rather, the  
3 Commission should consider recent evidence that interest rates have been increasing, and  
4 that capital costs over the period that the Company's 2020 rates will be in effect are  
5 expected to continue to increase as the Federal Reserve normalizes monetary policy and  
6 as the effects of the TCJA, which is discussed later in my testimony and in the Direct  
7 Testimony of Mr. Todd Shipman, flow through the economy.

8 **Q. What is the financial market's perspective on the future path of the federal funds**  
9 **rate?**

10 A. Following the FOMC December increase in interest rates, analysts are expecting  
11 additional increases in 2019. According to the February 2019 issue of Blue Chip  
12 Financial Forecasts, in response to the question regarding the amount of the increase in  
13 short-term interest rates by the Federal Reserve in 2019, 31.70 percent of those surveyed  
14 expect the Federal Reserve to raise the federal funds rate by 25 basis points, 48.80  
15 percent expect an increase of 50 basis points, and 14.60 percent expect an increase of 75  
16 basis points.<sup>21</sup>

17 **Q. What has been the effect of the Federal Reserve's monetary policy on the yields of**  
18 **long-term government bonds?**

19 A. As shown in Figure 6, yields on long-term government bonds have increased since the  
20 Federal Reserve started to raise the federal funds rate in 2016. However, the increase in  
21 long-term government bond yields has not been as pronounced as the rise in short-term  
22 interest rates. This is due to a shift in the supply and demand of long-term government

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<sup>21</sup> Blue Chip Financial Forecasts, Volume 38, No. 2, at 14 (Feb. 1, 2019).

bonds that has occurred since 2009. For example, since the Great Recession of 2008-2009, federal debt has increased significantly which has resulted in an increase in the supply of Treasury bonds in the market. In general, an increase in supply should result in a decrease in the price of Treasury bonds and an increase in yield. However, long-term government bonds yields have not increased as fast as expected given the increase in supply. This is because the demand for Treasury bonds has also increased since 2009. As noted in a recent article published by the Federal Reserve Bank of St. Louis, the demand for government bonds increased for a number of reasons some of which included increased holdings foreign governments as countries in Europe and Asia faced their own economic uncertainty, and increased holdings from commercial banks due to new regulations that required banks to hold a larger portion of high-quality liquid assets.<sup>22</sup> This has resulted in a more gradual increase in the yields on long-term government bonds over the past few years.

**Q. Is the demand for long-term government bonds currently increasing?**

**A.** No, it is not. As noted in the Federal Reserve article:

Some evidence suggests that the growth in demand for Treasuries has already begun to soften. Returning to Figures 1 and 2, foreign holdings have remained more or less constant since 2014, largely because of declining holdings in Japan and China. Likewise, regulation and policy changes such as the Dodd-Frank Act and new rules for prime money market funds may have only transitory effects on the demand for Treasuries. For example, the pace of growth of the ratio of commercial bank Treasury security holdings to private loans has slowed since 2014 (see Figure 3), as has the growth of investment in government money market funds since 2017 (Figure 4).<sup>23</sup>

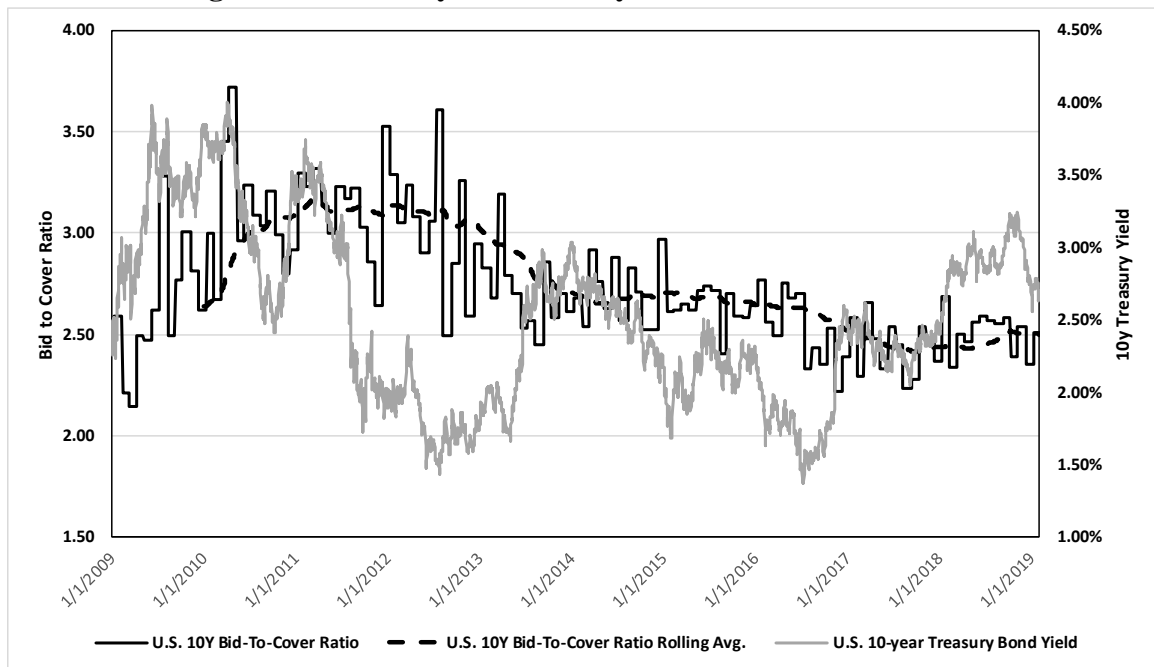
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<sup>22</sup> David Andolfatto and Andrew Spewak, Federal Reserve Bank of St. Louis, *On the Supply of, and Demand for, U.S. Treasury Debt*, Economic Synopses, No. 5, 2018. <https://doi.org/10.20955/es.2018.5>.

<sup>23</sup> Id.

1 Furthermore, another indicator of the demand for Treasury bonds is the bid to cover ratio  
2 which represents the dollar amount of bids received versus the dollar amount sold in a  
3 Treasury security auction. Therefore, a higher bid-to-cover ratio is indicative of an  
4 increase in the demand for government bonds. As shown in Figure 7, the bid-to-cover  
5 ratio for the 10-year U.S. Treasury bond is currently at its lowest point since 2009 which  
6 indicates that the demand for long-term government bonds has declined. The decline in  
7 demand is occurring at a time when the supply of Treasury bonds is expected to increase  
8 as the Federal Reserve continues its balance sheet unwind and the federal government  
9 issues bonds to offset the reduced tax revenue associated with the implementation of the  
10 TCJA. As a result, yields on long-term government bonds are expected to continue to  
11 increase over the near-term which is consistent with investors' expectations shown in  
12 Figure 6.

**Figure 7 : U.S. 10-year Treasury Bond Bid-to-Cover-Ratio**



**Q. What effect do rising interest rates have on the cost of equity?**

A. As interest rates continue to increase, the cost of equity for the proxy companies using the DCF model is likely to underestimate investors' required returns because the proxy group average dividend yield reflects the increase in stock prices that resulted from substantially lower interest rates. Rising interest rates support the selection of a return toward the upper end of a reasonable range of ROE estimates resulting from the DCF analysis. Alternatively, my CAPM and Bond Yield Plus Risk Premium analyses include estimated returns based on near-term projected interest rates, reflecting investors' expectations of market conditions over the period that the rates that are determined in this case will be set.

1       **C. Effect of Tax Reform on the ROE and Capital Structure**

2       **Q.     Are there other factors that should be considered in determining the cost of equity**  
3       **for Wisconsin Public Service?**

4       A.     Yes. The effect of the TCJA should also be considered in the determination of the cost of  
5       equity. The credit rating agencies have commented on the effect of the TCJA on  
6       regulated utilities. In summary, the TCJA is expected to reduce utility revenues due to the  
7       lower federal income taxes and the requirement to return excess accumulated deferred  
8       income taxes (“ADIT”) to customers. This change in revenue is expected to reduce Funds  
9       From Operations (“FFO”) metrics across the sector, and absent regulatory mitigation  
10      strategies, is expected to lead to weaker credit metrics and negative ratings actions for  
11      some utilities.<sup>24</sup>

12      **Q.     Have credit or equity analysts commented on the effect of the TCJA on utilities?**

13      A.     Yes. Moody’s Investors Services (“Moody’s”) indicated that while the TCJA was credit  
14      positive for many sectors, it has an overall negative credit impact on regulated operating  
15      companies of utilities and their holding companies due to the reduction in cash flow that  
16      results from the change in the federal tax rate and the loss of bonus depreciation.

17      Moody’s noted that the rates that regulators allow utilities to charge customers is based  
18      on a cost-plus model, with tax expense being one of the pass-through items. Utilities will  
19      collect less taxes at the lower rate, reducing revenue. While the taxes are ultimately paid  
20      out as an expense, under the new law utilities lose the timing benefit of bonus  
21      depreciation, reducing cash that may have been carried over a number of years. The

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<sup>24</sup> Fitch, Special Report, What Investors Want to Know, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector* (Jan. 24, 2018).

1 lower tax rate combined with the loss of bonus depreciation will have a negative effect on  
2 utility cash flows and will ultimately negatively impact the utilities' ability to fund  
3 ongoing operations and capital improvement programs.

4 **Q. How has Moody's responded to the increased risk for utilities resulting from the**  
5 **TCJA?**

6 A. In January 2018, Moody's issued a report changing the rating outlook for several  
7 regulated utilities, including WPSC's affiliate, Wisconsin Gas, from Stable to Negative.<sup>25</sup>  
8 At that time, Moody's noted that the rating change affected companies with limited  
9 cushion in their ratings for deterioration in financial performance. In June 2018, Moody's  
10 issued a report in which the rating agency downgraded the outlook for the entire  
11 regulated utility industry from stable to negative for the first time ever. Moody's cites  
12 ongoing concerns about the negative effect of the TCJA on cash flows of regulated  
13 utilities. While noting that "[r]egulatory commissions and utility management teams are  
14 taking important first steps"<sup>26</sup> and that "we have seen some credit positive developments  
15 in some states in response to tax reform,"<sup>27</sup> Moody's concludes that "we believe that it  
16 will take longer than 12-18 months for the majority of the sector to show any material  
17 financial improvement from such efforts."<sup>28</sup>

18 **Q. Has Moody's changed its outlook for utilities in 2019?**

19 A. No. Consistent with the prior reports issued by Moody's in January and June of 2018,  
20 Moody's is maintaining its negative outlook for regulated utilities in 2019 as a result of

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<sup>25</sup> Moody's, Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform (Jan. 19, 2018).

<sup>26</sup> Moody's, Regulated utilities – US: 2019 outlook shifts to negative due to weaker cash flows, continued high leverage, at 3 (June 18, 2019).

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

1 continued concerns over the effect of the TCJA on cash flows as well as increasing  
2 debt.<sup>29</sup> Moody's notes that "[t]he combination of financial pressures is expected to keep  
3 the sector's ratio of funds from operations to debt down around 15% in the year ahead."<sup>30</sup>

4 **Q. What does it mean for Moody's to downgrade a credit outlook?**

5 A. A Moody's rating outlook is an opinion regarding the likely rating direction over what it  
6 refers to as "the medium term." A Stable outlook indicates a low likelihood of a rating  
7 change in the medium term. A Negative outlook indicates a higher likelihood of a rating  
8 change over the medium term. While Moody's indicates that the time period for changing  
9 a rating subsequent to a change in the outlook from Stable will vary, on average Moody's  
10 indicates that a rating change will follow within a year of a change in outlook.<sup>31</sup>

11 **Q. Has Wisconsin Public Service experienced a downgrade related to cash flow metrics**  
12 **resulting from tax reform?**

13 A No, although, as noted above, Moody's revised the outlook for Wisconsin Gas from  
14 Stable to Negative which usually indicates a greater possibility of a ratings change over  
15 the near-term. Additionally, the parent company of Wisconsin Public Service, WEC, was  
16 recently downgraded by Moody's to Baa1 from A3 due to these concerns. Moody's  
17 indicated that "[t]he downgrade of WEC, WECC, and the Integrys entities reflects our  
18 expectation that the negative cash flow impact of tax reform, along with incremental debt  
19 to fund capital expenditures, will cause a deterioration in consolidated metrics".<sup>32</sup> While  
20 Moody's downgraded the credit rating for WEC, Moody's did cite to the recent decision

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<sup>29</sup> Moody's , Research Announcement: Moody's: US regulated utilities sector outlook for 2019 remains negative (Nov.8, 2018).

<sup>30</sup> *Id.*

<sup>31</sup> Moody's, Rating Symbols and Definitions, at 27 (July 2017).

<sup>32</sup> Moody's, Rating Action: Moody's downgrades WEC Energy, Wisconsin Energy Capital and Integrys to Baa1 from A3; stable outlook (July 12, 2018).

1 from the Commission regarding the treatment of the impacts from the TCJA for the  
2 electric operations of both Wisconsin Public Service and Wisconsin Electric Power  
3 Company (“WEPCO”). In the decision, the Commission allowed Wisconsin Public  
4 Service and WEPCO to use a portion of the refunds that were due to customers to reduce  
5 certain existing deferred balances (i.e., the transmission escrow account for transmission  
6 expenses),<sup>33</sup> which Moody’s viewed as potentially offsetting some of the impact on cash  
7 flows of the TCJA. However, Moody’s noted that the rest of WEC’s subsidiaries  
8 including Wisconsin Gas will experience a reduction in cash flow as a result of the  
9 TCJA.<sup>34</sup>

10 **Q. Are you aware of any other utilities that have been downgraded as a result of the**  
11 **effect of the TCJA?**

12 **A.** Yes. Figure 8 contains a list of additional utilities that have been downgraded as a result  
13 of tax reform.

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<sup>33</sup> Order, PSCW Docket No. 5-AF-101, at 13.

<sup>34</sup> Moody’s, Rating Action: Moody’s downgrades WEC Energy, Wisconsin Energy Capital and Integrys to Baa1 from A3; stable outlook (July 12, 2018).



**Figure 8: Credit Rating Downgrades Resulting from TCJA**

Utility	Rating Agency	Credit Rating before TCJA	Credit Rating after TCJA	Downgrade Date
Brooklyn Union Gas Company	Moody's	A2	A3	2/22/2019
Avista Corp.	Moody's	Baa1	Baa2	12/30/2018
Consolidated Edison Company of New York	Moody's	A2	A3	10/30/2018
Consolidated Edison, Inc.	Moody's	A3	Baa1	10/30/2018
Orange and Rockland Utilities	Moody's	A3	Baa1	10/30/2018
Southwestern Public Service Company	Moody's	Baa1	Baa2	10/19/2018
Dominion Energy Gas Holdings	Moody's	A2	A3	9/20/2018
Piedmont Natural Gas Company, Inc.	Moody's	A2	A3	8/1/2018
OGE Energy Corp.	Moody's	A3	Baa1	7/5/2018
Oklahoma Gas & Electric Company	Moody's	A1	A2	7/5/2018

**Q. Have other rating agencies commented on the effect of the TCJA on ratings?**

A. Yes. S&P and Fitch Ratings ("Fitch") have also commented on the implications of the TCJA on utilities. S&P published a report on January 24, 2018 entitled "U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound" in which S&P concludes:

The impact of tax reform on utilities is likely to be negative to varying degrees depending on a company's tax position going into 2018, how its regulators react, and how the company reacts in return. It is negative for credit quality because the combination of a lower tax rate and the loss of stimulus provisions related to bonus depreciation or full expensing of capital spending will create headwinds in operating cash-flow generation capabilities as customer rates are lowered in response to the new tax code. The impact could be sharpened or softened by regulators depending on how much they want to lower utility rates immediately instead of using some of the lower revenue requirement from tax reform to allow the utility to retain the cash for infrastructure investment or other expenses. Regulators must also recognize that tax reform is a strain on utility credit quality, and we expect companies to request stronger capital structures and other means to offset some of the negative impact.

Finally, if the regulatory response does not adequately compensate for the lower cash flows, we will look to the issuers, especially at the holding company level, to take steps to protect credit metrics if necessary. Some deterioration in the ability to deduct interest

1 expense could occur at the parent, making debt there relatively more  
2 expensive. More equity may make sense and be necessary to protect  
3 ratings if financial metrics are already under pressure and regulators  
4 are aggressive in lowering customer rates. It will probably take the  
5 remainder of this year to fully assess the financial impact on each  
6 issuer from the change in tax liabilities, the regulatory response, and  
7 the company's ultimate response. We have already witnessed  
8 differing responses. We revised our outlook to negative on PNM  
9 Resources Inc. and its subsidiaries on Jan. 16 after a Public Service  
10 Co. of New Mexico rate case decision incorporated tax savings with  
11 no offsetting measures taken to alleviate the weaker cash flows. It  
12 remains to be seen whether PNM will eventually do so, especially as  
13 it is facing other regulatory headwinds. On the other hand,  
14 FirstEnergy Corp. issued \$1.62 billion of mandatory convertible  
15 stock and \$850 million of common equity on Jan. 22 and explicitly  
16 referenced the need to support its credit metrics in the face of the  
17 new tax code in announcing the move. That is exactly the kind of  
18 proactive financial management that we will be looking for to fortify  
19 credit quality and promote ratings stability.<sup>35</sup>

20 In S&P's 2019 trends report, the rating agency notes that the utility industry's financial  
21 measures weakened in 2018 and attributed that to tax reform, capital spending and  
22 negative load growth. In addition, S&P expects that weaker credit metrics will continue  
23 into 2019 for those utilities operating with minimal financial cushion. S&P further  
24 expects that these utilities will look to offset the revenue reductions from tax reform with  
25 equity issuances. The rating agency reported that in 2018 regulated utilities issued nearly  
26 \$35 billion in equity, which is more than twice the equity issuances in 2016 and 2017.<sup>36</sup>  
27 Finally, Fitch recognized the implications of tax reform but indicated that any ratings  
28 actions will be guided by the response of regulators and the management of the utilities.  
29 Fitch notes that the solution will depend on the ability of utility management to manage  
30 the cash flow implications of the TCJA. Fitch offers several solutions to provide rate

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<sup>35</sup> S&P, *U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound* (Jan. 24, 2018).

<sup>36</sup> S&P, *Industry Top Trends 2019, North America Regulated Utilities* (Nov. 8, 2018).

1 stability and to moderate changes to cash flow in the near term, including increasing the  
2 authorized ROE and/or equity ratio as measures that can be implemented.<sup>37</sup>

3 **Q. What conclusions do you draw from your analysis of capital market conditions?**

4 A. The important conclusions resulting from capital market conditions are:

- 5 • The assumptions used in the ROE estimation models have been affected by the  
6 anomalous market conditions.
- 7 • Recent market conditions are not expected to persist as the Federal Reserve  
8 continues to normalize monetary policy. As a result, the recent historical market  
9 conditions are not reflective of the market conditions that will be present when the  
10 rates for Wisconsin Public Service will be in effect.
- 11 • It is important to consider the results of a variety of ROE estimation models,  
12 using forward-looking assumptions to estimate the cost of equity.
- 13 • Without adequate regulatory support, the TCJA will have a negative effect on  
14 utility cash flows, which increases investor risk expectations for utilities.

15 **VI. PROXY GROUP SELECTION**

16 **Q. Why have you used a group of proxy companies to estimate the cost of equity for**  
17 **Wisconsin Public Service?**

18 A. In this proceeding, we are focused on estimating the cost of equity for an electric and  
19 natural gas utility company that is not itself publicly traded. Since the cost of equity is a  
20 market-based concept and given that Wisconsin Public Service does not make up the  
21 entirety of a publicly traded entity, it is necessary to establish a group of companies that  
22 is both publicly traded and comparable to Wisconsin Public Service in certain  
23 fundamental business and financial respects to serve as its “proxy” in the ROE estimation

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<sup>37</sup> Fitch, Special Report, What Investors Want to Know, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector* (Jan. 24, 2018).

1 process. The proxy companies used in my analyses all possess a set of operating and risk  
2 characteristics that are substantially comparable to the Company, and thus provide a  
3 reasonable basis to derive and estimate the appropriate ROE for Wisconsin Public  
4 Service.

5 **Q. Please provide a brief profile of Wisconsin Public Service.**

6 A. Wisconsin Public Service provides electric generation, transmission, and distribution  
7 services to approximately 444,000 electric customers and 328,000 natural gas customers  
8 located in northeast and central Wisconsin.<sup>38</sup> WEC, the parent company of WPSC,  
9 expects under normal weather conditions that retail electric sales volumes and associated  
10 peak demand will be flat or grow slightly over the next five years across all of the  
11 Wisconsin operating subsidiaries.<sup>39</sup> Wisconsin Public Service's current long-term issuer  
12 ratings are as follows: (1) Moody's-A2 (outlook stable); and (2) S&P A- (outlook  
13 stable).<sup>40</sup>

14 **Q. How did you select the companies included in your proxy groups?**

15 A. I established a combination gas and electric utility proxy group ("CUPG") to determine  
16 the appropriate ROE for Wisconsin Public Service since, as discussed above, the  
17 Company provides both electric and natural gas service to customers in Wisconsin. For  
18 the CUPG, I began with the group of 39 companies that Value Line classifies as Electric  
19 Utilities and applied the following screening criteria to select companies that:

- 20 • pay consistent quarterly cash dividends, because companies that do not cannot be  
21 analyzed using the Constant Growth DCF model;

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<sup>38</sup> WPSC website.

<sup>39</sup> WEC Energy Group, SEC Form 10-K for the fiscal year ended December 31, 2017, at 5.

<sup>40</sup> SNL Financial, February 5, 2019.

- 1           • have investment grade long-term issuer ratings from S&P and/or Moody's;
- 2           • are covered by at least two utility industry analysts;
- 3           • have positive long-term earnings growth forecasts from at least two utility
- 4           industry equity analysts;
- 5           • own regulated generation assets that are in rate base;
- 6           • derive more than 70.00 percent of their total operating income from regulated
- 7           operations;
- 8           • derive more than 50.00 percent of their total regulated operating income from
- 9           regulated electric operations;
- 10          • derive more than 10.00 percent of regulated operating income from gas
- 11          distribution operations; and
- 12          • were not parties to a merger or transformative transaction during the analytical
- 13          periods relied on.

14   **Q. Did you include WEC in your analysis?**

15   A. No. It is my practice to exclude the subject company, or its parent holding company, from

16          the proxy group to avoid circular logic that otherwise would occur.

17   **Q. What is the composition of your CUPG?**

18   A. The screening criteria discussed above is shown in Ex.-WPSC-Bulkley-3 and resulted in

19          a proxy group consisting of the companies shown in Figure 9 below.

1

**Figure 9: CUPG Proxy Group**

<b>Company</b>	<b>Ticker</b>
Ameren Corporation	AEE
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
DTE Energy Company	DTE
NorthWestern Corporation	NWE
Sempra Energy	SRE
Xcel Energy Inc.	XEL

## 2 VII. **COST OF EQUITY ESTIMATION**

3 **Q. Please briefly discuss the ROE in the context of the regulated rate of return.**

4 A. The overall rate of return for a regulated utility is based on its weighted average cost of  
5 capital, in which the cost rates of the individual sources of capital are weighted by their  
6 respective book values. While the costs of debt and preferred stock can be directly  
7 observed, the cost of equity is market-based and, therefore, must be estimated based on  
8 observable market data.

9 **Q. How is the required ROE determined?**

10 A. The required ROE is estimated by using one or more analytical techniques that rely on  
11 market-based data to quantify investor expectations regarding required equity returns,  
12 adjusted for certain incremental costs and risks. Informed judgment is then applied to  
13 determine where the company's cost of equity falls within the range of results. The key  
14 consideration in determining the cost of equity is to ensure that the methodologies  
15 employed reasonably reflect investors' views of the financial markets in general, as well  
16 as the subject company (in the context of the proxy group), in particular.

1   **Q.     What methods did you use to determine Wisconsin Public Service’s ROE?**

2   A.     I considered the results of the Constant Growth DCF model, the CAPM model, and the  
3         Bond Yield Plus Risk Premium methodology. As discussed in more detail below, a  
4         reasonable ROE estimate appropriately considers alternative methodologies and the  
5         reasonableness of their individual and collective results.

6         **A. Importance of Multiple Analytical Approaches**

7   **Q.     Why is it important to use more than one analytical approach?**

8   A.     Because the cost of equity is not directly observable, it must be estimated based on both  
9         quantitative and qualitative information. When faced with the task of estimating the cost  
10        of equity, analysts and investors are inclined to gather and evaluate as much relevant data  
11        as reasonably can be analyzed. Several models have been developed to estimate the cost  
12        of equity, and I use multiple approaches to estimate the cost of equity. As a practical  
13        matter, however, all the models available for estimating the cost of equity are subject to  
14        limiting assumptions or other methodological constraints. Consequently, many well-  
15        regarded finance texts recommend using multiple approaches when estimating the cost of  
16        equity. For example, Copeland, Koller, and Murrin<sup>41</sup> suggest using the CAPM and  
17        Arbitrage Pricing Theory model, while Brigham and Gapenski<sup>42</sup> recommend the CAPM,  
18        DCF, and Bond Yield Plus Risk Premium approaches.

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<sup>41</sup> Tom Copeland, Tim Koller and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, at 214 (New York: McKinsey & Company, Inc., 3d ed. 2000).

<sup>42</sup> Eugene Brigham, Louis Gapenski, *Financial Management: Theory and Practice*, at 341 (Orlando: Dryden Press, 7th ed., 1994).

1 **Q. Is it important given the current market conditions to use more than one analytical**  
2 **approach?**

3 A. Yes. As discussed in Section V above, the U.S. economy is beginning to emerge from an  
4 unprecedented period of low interest rates. Low interest rates, and the effects of the  
5 investor “flight to quality” can be seen in high utility share valuations, relative to  
6 historical levels and relative to the broader market. Higher utility stock valuations  
7 produce lower dividend yields and result in lower cost of equity estimates from a DCF  
8 analysis. Low interest rates also impact the CAPM in two ways: (1) the risk-free rate is  
9 lower, and (2) because the market risk premium is a function of interest rates, (i.e., it is  
10 the return on the broad stock market less the risk-free interest rate), the risk premium  
11 should move higher when interest rates are lower. Therefore, it is important to use  
12 multiple analytical approaches to moderate the impact that the current low interest rate  
13 environment is having on the ROE estimates for the proxy group and, where possible,  
14 consider using projected market data in the models to estimate the return for the forward-  
15 looking period.

16 **Q. Are you aware of any regulatory commissions who have recognized that the current**  
17 **anomalous conditions in capital markets are causing ROE recommendations based**  
18 **on DCF models to be unreasonable?**

19 A. Yes, several regulatory commissions have addressed the effect of capital market  
20 conditions on the DCF model, including FERC, the ICC, the PPUC and the Missouri  
21 PSC.



1 **Q. Please summarize how FERC has responded to the effect of market conditions on**  
2 **the DCF.**

3 A. Understanding the important role that dividend yields play in the DCF model, FERC  
4 determined that anomalous capital market conditions have caused the DCF model to  
5 understate equity costs for regulated utilities. In Opinion No. 531, issued in June 2014,  
6 FERC noted:

7 There is ‘model risk’ associated with the excessive reliance or  
8 mechanical application of a model when the surrounding conditions  
9 are outside of the normal range. ‘Model risk’ is the risk that a  
10 theoretical model that is used to value real world transactions fails to  
11 predict or represent the real phenomenon that is being modeled.<sup>43</sup>

12 FERC also noted that then-current low interest rates and bond yields resulted in  
13 anomalous market conditions, justifying a movement away from the midpoint of the DCF  
14 analysis. In that case, FERC relied on the CAPM and other risk premium methodologies  
15 to inform its judgment to set the return above the midpoint of the DCF results.

16 In Opinion No. 551, issued in September 2016, FERC also found anomalous market  
17 conditions prevalent, and again concluded that it was necessary to rely on ROE  
18 estimation methodologies other than the DCF model to set the appropriate ROE:

19 Though the Commission noted certain economic conditions in  
20 Opinion No. 531, the principle argument was based on low interest  
21 rates and bond yields, conditions that persisted throughout the study  
22 period. Consequently, we find that *capital market conditions are still*  
23 *anomalous* as described above...<sup>44</sup>

24 \*\*\*\*\*

25 Because the evidence in this proceeding indicates that *capital*  
26 *markets continue to reflect the type of unusual conditions that the*  
27 *Commission identified in Opinion No. 531*, we remain concerned

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<sup>43</sup> FERC Docket No. EL11-66-001, Opinion No. 531, at fn 286.

<sup>44</sup> FERC Docket No. EL14-12-002, Opinion No. 551, at para. 121 (emphasis added).

1 that a mechanical application of the DCF methodology would result  
2 in a return inconsistent with *Hope* and *Bluefield*.<sup>45</sup>

3 \*\*\*\*\*

4 As the Commission found in Opinion No. 531, under these  
5 circumstances, we have less confidence that the midpoint of the zone  
6 of reasonableness in this proceeding accurately reflects the equity  
7 returns necessary to meet the *Hope* and *Bluefield* capital attraction  
8 standards. We therefore find it necessary and reasonable to consider  
9 additional record evidence, including evidence of alternative  
10 methodologies...<sup>46</sup>

11 Finally, in October 2018, FERC issued an Order indicating its plan to establish ROEs  
12 based on an equal weighting of the results of four financial models: the DCF, CAPM,  
13 Expected Earnings and Risk Premium. FERC explains its reasons for moving away from  
14 sole reliance on the DCF model as follows:

15 Our decision to rely on multiple methodologies in these four  
16 complaint proceedings is based on our conclusion that *the DCF*  
17 *methodology may no longer singularly reflect how investors make*  
18 *their decisions*. We believe that, since we adopted the DCF  
19 methodology as our sole method for determining utility ROEs in the  
20 1980s, investors have increasingly used a diverse set of data sources  
21 and models to inform their investment decisions. Investors appear to  
22 base their decisions on numerous data points and models, including  
23 the DCF, CAPM, Risk Premium, and Expected Earnings  
24 methodologies. As demonstrated in Figure 2 below, which shows the  
25 ROE results from the four models over the four test periods at issue  
26 in this proceeding, these models do not correlate such that the DCF  
27 methodology captures the other methodologies. In fact, in some  
28 instances, their cost of equity estimates may move in opposite  
29 directions over time. Although we recognize the greater  
30 administrative burden on parties and the Commission to evaluate  
31 multiple models, we believe that *the DCF methodology alone no*  
32 *longer captures how investors view utility returns because investors*  
33 *do not rely on the DCF alone and the other methods used by*  
34 *investors do not necessarily produce the same results as the DCF*.  
35 Consequently, it is appropriate for our analysis to consider a

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<sup>45</sup> *Id.*, at para. 122 (emphasis added).

<sup>46</sup> *Id.*

1 combination of the DCF, CAPM, Risk Premium, and Expected  
2 Earnings approaches.<sup>47</sup>

3 **Q. How have the PPUC, the ICC and the Missouri PSC addressed the effect of market**  
4 **conditions on the DCF?**

5 A. In a 2012 decision for PPL Electric Utilities, the PPUC recognized that market conditions  
6 were causing the DCF model to produce results that were much lower than other models  
7 such as the CAPM and Bond Yield Plus Risk Premium. The PPUC's Order explained:

8 Sole reliance on one methodology without checking the validity of  
9 the results of that methodology with other cost of equity analyses  
10 does not always lend itself to responsible ratemaking. We conclude  
11 that methodologies other than the DCF can be used as a check upon  
12 the reasonableness of the DCF derived equity return calculation.<sup>48</sup>

13 The PPUC ultimately concluded:

14 As such, where evidence based on the CAPM and RP methods  
15 suggest that the DCF-only results may understate the utility's current  
16 cost of equity capital, we will give consideration to those other  
17 methods, to some degree, in determining the appropriate range of  
18 reasonableness for our equity return determination.<sup>49</sup>

19 In a recent ICC case, Staff relied on a DCF analysis that resulted in average returns for  
20 their proxy groups of 7.24 percent to 7.51 percent. The utility demonstrated that these  
21 results were far too low to be reasonable, by comparing the results of Staff's models to  
22 recently authorized ROEs for regulated utilities and the return on the S&P 500.<sup>50</sup> The  
23 ICC agreed with the utility that Staff's proposed ROE of 8.04 percent was anomalous and  
24 that such a return was not competitive and would deter investment in Illinois.<sup>51</sup> In setting

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<sup>47</sup> FERC Docket No. EL 11-66-001, et al., Order Directing Briefs, issued October 16, 2018, at para. 40 (emphases added) (Figure 2 was omitted).

<sup>48</sup> *PPL Electric Utilities*, PPUC No. R-2012-2290597, meeting held December 5, 2012, at 80.

<sup>49</sup> *Id.* at 81.

<sup>50</sup> Illinois-American Water Company Initial Brief, August 31, 2016, at 10, ICC Docket No. 16-0093.

<sup>51</sup> Illinois Staff's analysis and recommendation in that proceeding were based on its application of the multi-stage DCF model and the CAPM to a proxy group of water utilities.

1 the return in that proceeding the ICC found it necessary to consider other factors beyond  
2 the outputs of the financial models, in particular whether or not the return is sufficient to  
3 attract capital, maintain financial integrity, and is commensurate with returns for  
4 companies of comparable risk, while balancing the interests of customers and  
5 shareholders.<sup>52</sup>

6 Finally, in February 2018, the Missouri PSC in a gas rate case cited the importance of  
7 considering multiple methodologies to estimate the cost of equity and the need for the  
8 authorized ROE to be consistent with returns in other jurisdictions and to reflect the  
9 growing economy and investor expectations for higher interest rates.

10 Based on the competent and substantial evidence in the record, on its  
11 analysis of the expert testimony offered by the parties, and on its  
12 balancing of the interests of the company's ratepayers and  
13 shareholders, as fully explained in its findings of fact and  
14 conclusions of law, the Commission finds that 9.8 percent is a fair  
15 and reasonable return on equity for Spire Missouri. That rate is  
16 nearly the midpoint of all the experts' recommendations and *is*  
17 *consistent with the national average, the growing economy, and the*  
18 *anticipated increasing interest rates.* The Commission finds that this  
19 rate of return will allow Spire Missouri to compete in the capital  
20 market for the funds needed to maintain its financial health.<sup>53</sup>

21 **Q. What are your conclusions about the results of the DCF and CAPM models?**

22 A. Recent market data used as the basis for the assumptions for both models have been  
23 affected by market conditions. As a result, relying exclusively on historical assumptions  
24 in these models, without considering whether these assumptions are consistent with  
25 investors' future expectations, will underestimate the cost of equity that investors would  
26 require over the period that the rates in this case are to be in effect. Specifically, relying

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<sup>52</sup> *Illinois-American Water Company*, ICC Docket No. 16-0093, 2016 WL 7325212 (2016), at 55.  
<sup>53</sup> Report and Order, Issue Date February 21, 2018, at 34, Mo. PSC File No. GR-2017-0215 and File No. GR-2017-0216 PSC (Feb. 21, 2018) (emphasis added).

on the historical average of abnormally high stock prices will result in low dividend yields that are not expected to continue over the period that the new rates will be in effect. This, in turn, underestimates the ROE for the rate period.

The use of recent historical Treasury bond yields in the CAPM also tends to underestimate the projected cost of equity. Recent experience indicates that interest rates are increasing, and the market expects them to continue to increase. This expectation means that the expected cost of equity is higher than suggested by the CAPM using historical average yields. The use of projected yields on Treasury bonds results in CAPM estimates that are more reflective of the market conditions that investors expect during the period that the Company's rates will be in effect.

#### **B. Constant Growth DCF Model**

**Q. Please describe the DCF approach.**

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where  $P_0$  represents the current stock price,  $D_1 \dots D_\infty$  are all expected future dividends, and  $k$  is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

Equation [2] is often referred to as the Constant Growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

**Q. What assumptions are required for the Constant Growth DCF model?**

A. The Constant Growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions is violated, considered judgment and/or specific adjustments should be applied to the results.

**Q. What market data did you use to calculate the dividend yield in your Constant Growth DCF model?**

A. The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annualized dividend and average closing stock prices over the 30-, 90-, and 180-trading days ended January 31, 2019.

**Q. Why did you use 30-, 90-, and 180-day averaging periods?**

A. In my Constant Growth DCF model, I use an average of recent trading days to calculate the term  $P_0$  in the DCF model to ensure that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day. The averaging period should also be reasonably representative of expected capital market conditions over the long-term. However, the averaging periods that I use rely on historical data which is not consistent with the forward-looking expectation that interest rates will increase. Therefore, the results of my Constant Growth DCF model using historical data will underestimate the

forward-looking cost of equity. As a result, I place more weight on the median to median-high results produced by my Constant Growth DCF model.

**Q. Did you make any adjustments to the dividend yield to account for periodic growth in dividends?**

A. Yes, I did. Since utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected first year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

**Q. Why is it important to select appropriate measures of long-term growth in applying the DCF model?**

A. In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume a constant payout ratio, and that earnings per share, dividends per share and book value per share all grow at the same constant rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to incorporate a variety of sources of long-term earnings growth rates into the Constant Growth DCF model.

1 **Q. Which sources of long-term earnings growth rates did you use?**

2 A. My Constant Growth DCF model incorporates three sources of long-term earnings  
3 growth rates: (1) Zacks Investment Research; (2) Thomson First Call (provided by  
4 Yahoo! Finance); and (3) Value Line Investment Survey.

5 **C. DCF Model Results**

6 **Q. How did you calculate the range of results for the Constant Growth DCF Model?**

7 A. I calculated the low result for my DCF models using the minimum growth rate (*i.e.*, the  
8 lowest of the First Call, Zacks, and Value Line earnings growth rates) for each of the  
9 proxy group companies. Thus, the low result reflects the minimum DCF result for the  
10 proxy group. I used a similar approach to calculate the high results, using the highest  
11 growth rate for each proxy group company. The mean results were calculated using the  
12 average growth rates from all sources.

13 **Q. Have you excluded any of the Constant Growth DCF results for individual**  
14 **companies in your proxy group?**

15 A. Yes, I have. I eliminated any ROE estimate that is below the yield on the 30-year  
16 Treasury Bond plus a minimum equity risk premium. The lower boundary is based on a  
17 recent position established by the Minnesota Department of Commerce in Docket No.  
18 E017/GR-15-1033.<sup>54</sup> The lower bound of 7.00 percent was established by reviewing the  
19 equity risk premium for the proxy group as calculated by my CAPM analysis. As shown  
20 in Ex.-WPSC-Bulkley-6, the market risk premium ranged from 10.95 percent to 11.81  
21 percent. Therefore, the implied equity risk premium for the proxy group is calculated as

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<sup>54</sup> In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Service in the State of Minnesota, Minn. PSC Docket No. E017/GR-15-1033 (August 16, 2016), at 11.



1 the market return times the proxy group average beta. For example, as shown in Ex.-  
2 WPSC-Bulkley-6, the proxy group had a Value Line beta of 0.600 which would result in  
3 a market risk premium for the proxy group ranging from 6.57 percent to 7.09 percent.  
4 However, a ROE estimate of 7.00 percent would result in an equity risk premium ranging  
5 from 3.10 percent to 3.97 percent which would result in an equity risk premium for the  
6 proxy group that is approximately 330 basis points less than the equity risk premium for  
7 the proxy group calculated using my CAPM analysis. Therefore, it is reasonable to  
8 conclude that a ROE of 7.00 percent would not sufficiently compensate investors for the  
9 additional risk of investing in utility stocks. As a result, I have excluded individual DCF  
10 estimates that are below 7.00 percent.

11 **Q. What were the results of your DCF analyses?**

12 A. Figure 10 summarizes the results of my DCF analyses. As shown in Figure 10, the  
13 median DCF results range from 9.83 percent to 9.94 percent and the median high results  
14 are in the range of 10.46 percent to 10.57 percent. While I also summarize the median  
15 low DCF results, I do not believe that the low DCF results provide a reasonable spread  
16 over the expected yields on Treasury bonds to compensate investors for the incremental  
17 risk related to an equity investment.

**Figure 10: DCF Results for Wisconsin Public Service**

	Median Low	Median	Median High
Constant Growth DCF using Earnings Growth Rates <sup>55</sup>			
30-Day Average	9.15%	9.86%	10.47%
90-Day Average	9.12%	9.83%	10.46%
180-Day Average	9.23%	9.94%	10.57%

**Q. What are your conclusions about the results of the DCF models?**

A. As discussed previously, one primary assumption of the DCF models is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. Because current utility stock valuations are high and may not be sustainable, it is important to consider the results of the DCF models with caution. As I indicated previously, these valuations are due to the lower interest rate environment as investors seek higher returns. With the expectation of rising interest rates, such valuations are not expected to be sustained in the upcoming years. Since the low dividend yields may result in the DCF model understating investors' expected return, I have given primary weight to the median and high-end DCF results. My overall recommendation also relies on the results of other ROE estimation models.

**D. CAPM Analysis**

**Q. Please briefly describe the CAPM.**

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security. This second component is

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<sup>55</sup> See Ex.-WPSC-Bulkley-4.

the product of the market risk premium and the Beta coefficient, which measures the relative riskiness of the security being evaluated.

The CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

Where:

$K_e$  = the required market ROE;

$\beta$  = Beta coefficient of an individual security;

$r_f$  = the risk-free rate of return; and

$r_m$  = the required return on the market.

In this specification, the term  $(r_m - r_f)$  represents the market risk premium. According to the theory underlying the CAPM, since unsystematic risk can be diversified away, investors should only be concerned with systematic or non-diversifiable risk. Non-diversifiable risk is measured by Beta, which is defined as:

$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)} \quad [4]$$

The variance of the market return (i.e., Variance  $(r_m)$ ) is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the general market (i.e., Covariance  $(r_e, r_m)$ ) reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, Beta represents the risk of the security relative to the general market.

1   **Q.     What risk-free rate did you use in your CAPM analysis?**

2   A.     I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day  
3           average yield on 30-year U.S. Treasury bonds (i.e., 3.03 percent);<sup>56</sup> (2) the average  
4           projected 30-year U.S. Treasury bond yield for Q2 2019 through Q2 2020 of 3.52  
5           percent;<sup>57</sup> and (3) the average projected 30-year U.S. Treasury bond yield for 2020  
6           through 2024 of 3.90 percent.<sup>58</sup>

7   **Q.     Would you place more weight on one of these scenarios?**

8   A.     Yes. Based on current market conditions, I place more weight on the results of the  
9           projected yields on the 30-year Treasury bonds. As discussed previously, the estimation  
10          of the cost of equity in this case should be forward looking since it is the return that  
11          investors would receive over the future rate period. Therefore, the inputs and assumptions  
12          used in the CAPM analysis should reflect the market's expectations for the period in  
13          which the rates will be effective. As discussed in Section V of my Direct Testimony,  
14          leading economists surveyed by Blue Chip are expecting an increase in long-term interest  
15          rates over the next five years. This is an important consideration for equity investors as  
16          they assess their return requirements. While I have included the results of a CAPM  
17          analysis which relies the current average risk-free rate, this analysis fails to take into  
18          consideration the effect of the market's expectations for interest rate increases on the cost  
19          of equity.

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<sup>56</sup> Bloomberg Professional, as of January 31, 2019.

<sup>57</sup> Blue Chip Financial Forecasts, Vol. 38, No. 2, February 1, 2019, at 2.

<sup>58</sup> Blue Chip Financial Forecasts, Vol. 37, No. 12, December 1, 2018, at 14.

1   **Q.    What Beta coefficients did you use in your CAPM analysis?**

2   A.    As shown on Ex.-WPSC-Bulkley-5, I used the average Beta coefficients for the proxy  
3       group companies as reported by Value Line. Value Line's calculation is based on five  
4       years of weekly returns relative to the New York Stock Exchange Composite Index. My  
5       average Beta coefficient for the proxy group was 0.600.

6   **Q.    How did you estimate the market risk premium in the CAPM?**

7   A.    I estimated the market risk premium based on the expected return on S&P 500 Index less  
8       the yield on the 30-year Treasury bond. I calculate the expected return on the S&P 500  
9       Index companies for which dividend yields and long-term earnings projections are  
10      available using the Constant Growth DCF model discussed earlier in my Direct  
11      Testimony. Based on an estimated market capitalization-weighted dividend yield of 2.08  
12      percent and a weighted long-term growth rate of 12.64 percent, the estimated required  
13      market return for the S&P 500 Index is 14.85 percent. As shown in Ex.-WPSC-Bulkley-  
14      6, the implied market risk premium over the current 30-day average of the 30-year U.S.  
15      Treasury bond yield, and projected yields on the 30-year U.S. Treasury bond, range from  
16      10.95 percent to 11.81 percent.

17   **Q.    Have other regulators endorsed the use of a forward-looking market risk premium?**

18   A.    Yes. In Opinion No. 531-B, FERC specifically endorsed a method that is similar to the  
19      method I have used to calculate the forward-looking market risk premium (i.e., applying  
20      a Constant Growth DCF analysis to the S&P 500 and using the 30-year Treasury bond  
21      yields).<sup>59</sup>

22      In response to arguments against this methodology, FERC stated:

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<sup>59</sup> 150 FERC ¶ 61,165, at para. 109-111 (Mar. 3, 2015).

1 We are also unpersuaded that the growth rate projection in the  
2 NETOs' CAPM study was skewed by the NETOs' reliance on  
3 analysts' projections of non-utility companies' medium-term  
4 earnings growth, or that the study failed to consider that those  
5 analysts' estimates reflect unsustainable short-term stock repurchase  
6 programs and are not long-term projections. As explained above, the  
7 NETOs based their growth rate input on data from IBES, which the  
8 Commission has found to be a reliable source of such data. Thus, the  
9 time periods used for the growth rate projections in the NETOs'  
10 CAPM study are the time periods over which IBES forecasts  
11 earnings growth. Petitioners' arguments against the time period on  
12 which the NETOs' CAPM analysis is based are, in effect, arguments  
13 that IBES data are insufficient in a CAPM study.<sup>60</sup>

14 \*\*\*

15 While an individual company cannot be expected to sustain high  
16 short term growth rates in perpetuity, the same cannot be said for a  
17 stock index like the S&P 500 that is regularly updated to contain  
18 only companies with high market capitalization, and the record in  
19 this proceeding does not indicate that the growth rate of the S&P 500  
20 stock index is unsustainable.<sup>61</sup>

21 **Q. What are the results of your CAPM analyses?**

22 A. As shown in Figure 11 (*see also* Ex.-WPSC-Bulkley-6), my CAPM analysis produces a  
23 range of returns from 10.12 percent to 10.47 percent.

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<sup>60</sup> *Id.*, at para. 112.

<sup>61</sup> *Id.*, at para. 113.

**Figure 11: CAPM Results for WPSC**

	<b>CAPM Results</b>
Current Risk-Free Rate (3.03%)	10.12%
Q2 2019-Q2 2020 Projected Risk-Free Rate (3.52%)	10.32%
2020-2024 Projected Risk-Free Rate (3.90%)	10.47%
<b>Mean Result</b>	<b>10.30%</b>

**E. Bond Yield Plus Risk Premium Analysis**

**Q. Please describe the Bond Yield Plus Risk Premium approach.**

A. In general terms, this approach is based on the fundamental principle that equity investors bear the incremental risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, since investments in equity have greater risk than investments in bonds, equity investors must be compensated to bear that risk.<sup>62</sup> Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for electric utility companies and natural gas utility companies as the historical measure of the cost of equity to determine the risk premium.

**Q. Are there other considerations that should be addressed in conducting this analysis?**

A. Yes. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates.<sup>63</sup> That is, as interest rates increase (decrease), the equity risk premium decreases (increases). Consequently, it is important to develop an analysis that: (1)

<sup>62</sup> Roger A. Morin, *New Regulatory Finance*, at 108 (Public Utility Reports 2006).

<sup>63</sup> *Id.* at 123-125.

reflects the inverse relationship between interest rates and the equity risk premium; and  
(2) relies on recent and expected market conditions. Such an analysis can be developed  
based on a regression of the risk premium as a function of U.S. Treasury bond yields. If  
we let authorized ROEs for utility companies serve as the measure of required equity  
returns and define the yield on the long-term U.S. Treasury bond as the relevant measure  
of interest rates, the risk premium is the difference between those two points.<sup>64</sup>

**Q. Is the Bond Yield Plus Risk Premium analysis relevant to investors?**

A. Yes. Investors are aware of ROE awards in other jurisdictions, and they consider those  
awards as a benchmark for a reasonable level of equity returns for utilities of comparable  
risk operating in other jurisdictions.<sup>65</sup> Since my Bond Yield Plus Risk Premium analysis  
is based on authorized ROEs for utility companies relative to corresponding Treasury  
yields, it provides relevant information to assess the return expectations of investors.

**Q. What did your Bond Yield Plus Risk Premium analysis reveal for your national  
survey of electric utilities?**

A. As shown in Figure 12 below, from 1992 through January 2019, there was a strong  
negative relationship between risk premia and interest rates. To estimate that relationship,  
I conducted a regression analysis using the following equation:

$$RP = a + b(T) \text{ [5]}$$

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<sup>64</sup> See e.g., S. Keith Berry, *Interest Rate Risk and Utility Risk Premia during 1982-93*, Managerial and Decision Economics, Vol. 19, No. 2 (Mar. 1998), in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates. See also Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return*, Financial Management, at 66 (Spring 1986).

<sup>65</sup> See e.g., Moody's, *Rating Methodology: Regulated Electric and Gas Utilities* (June 23, 2017) for a discussion on how Moody's considers the overall regulatory framework in establishing credit ratings. See also S&P, *U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others* (June 25, 2018).



Where:

RP = Risk Premium (difference between allowed ROEs and the yield on 30-year  
U.S. Treasury bonds)

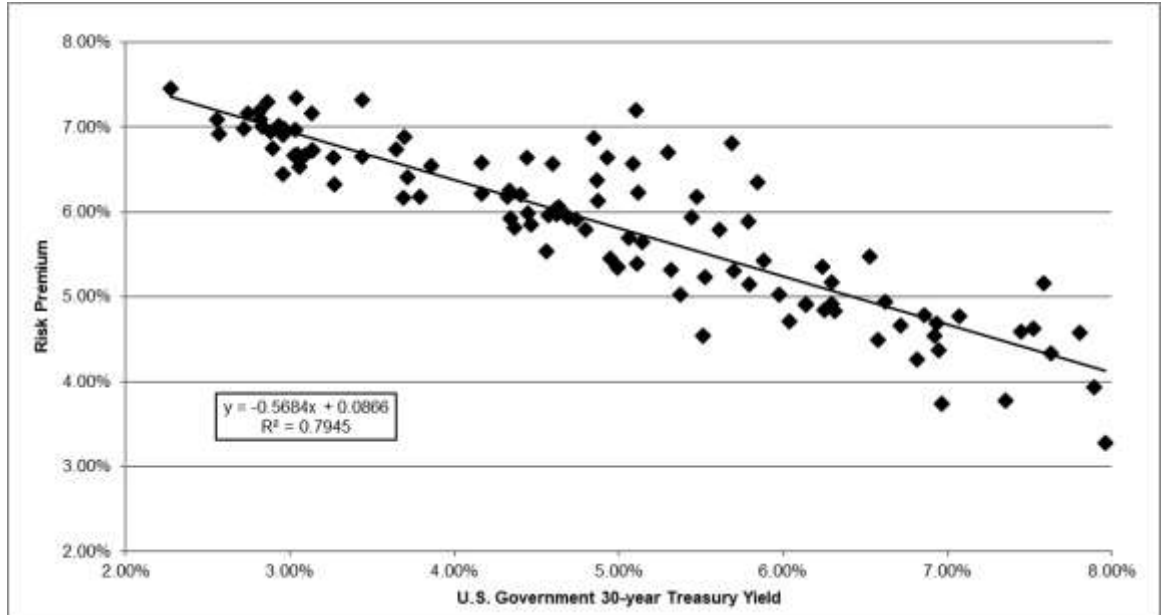
a = intercept term

b = slope term

T = 30-year U.S. Treasury bond yield

Data regarding allowed ROEs were derived from 601 integrated electric utility rate cases from 1992 through January 2019 as reported by Regulatory Research Associates (“RRA”).<sup>66</sup> This equation’s coefficients were statistically significant at the 99.00 percent level.

**Figure 12: Risk Premium Results - National Electric Utility Survey**



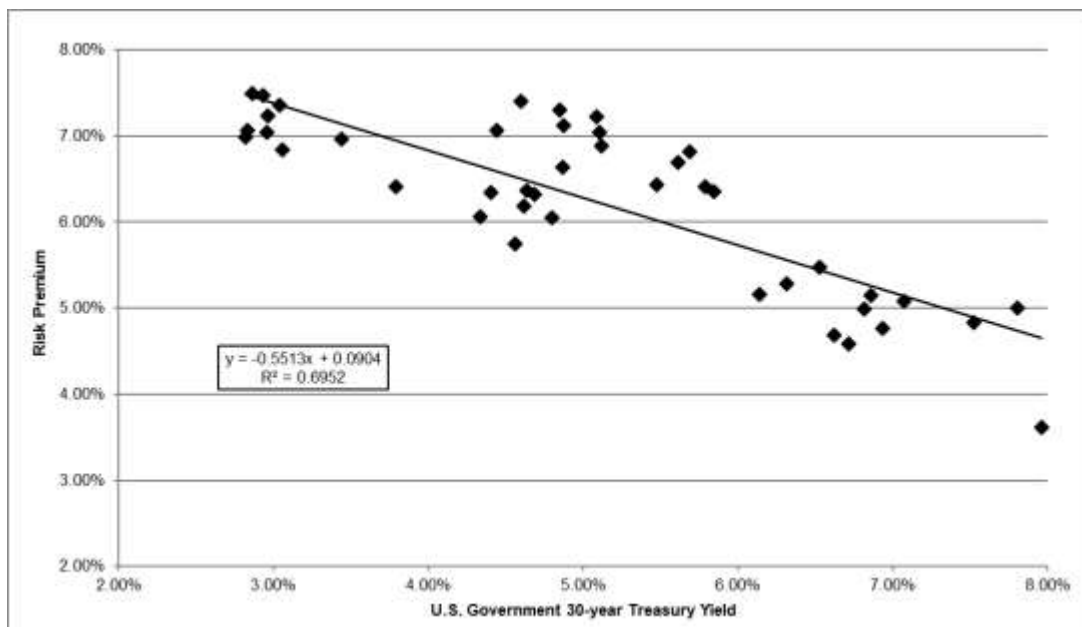
<sup>66</sup> This analysis began with a total of 1,136 cases and was screened to eliminate limited issue rider cases, transmission-only cases, distribution-only cases, and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data for 601 cases.

As shown on Ex.-WPSC-Bulkley-7, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 3.03 percent), the risk premium would be 6.93 percent, resulting in an estimated ROE of 9.97 percent. Based on the near-term (Q2 2019 – Q2 2020) projections of the 30-year U.S. Treasury bond yield (i.e., 3.52 percent), the risk premium would be 6.66 percent, resulting in an estimated ROE of 10.18 percent. Based on longer-term (2020-2024) projections of the 30-year U.S. Treasury bond yield (i.e., 3.90 percent), the risk premium would be 6.44 percent, resulting in an estimated ROE of 10.34 percent.

**Q. Have you performed a jurisdictionally focused Bond Yield Plus Risk Premium analysis for electric utilities operating in the State of Wisconsin?**

A. Yes, I have. I conducted a similar analysis to that above using allowed ROEs derived solely from Wisconsin electric utility rate case decisions from 1992 through January 2019; 70 such cases were reported by RRA. This equation's coefficients were also statistically significant at the 99.0% confidence level.

**Figure 13: Risk Premium Results - Wisconsin Electric Utility Survey**

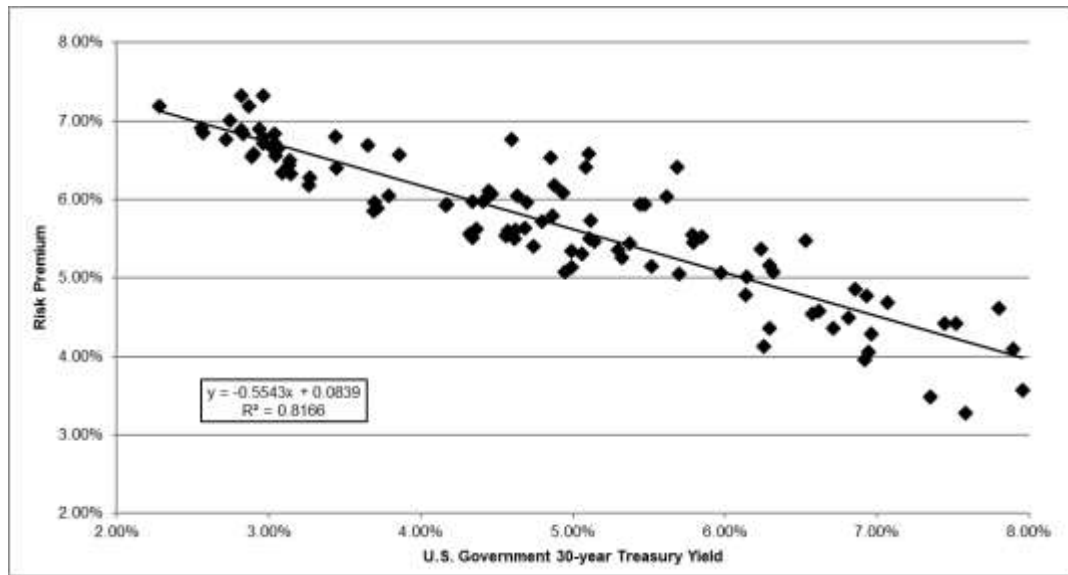


1 Interestingly, the intercept of the Wisconsin sample is 38 basis points higher than the  
2 national sample (i.e., .0904 vs. .0866). This means that, disregarding variation in interest  
3 rates, Wisconsin's electric utilities on average are allowed a 38 basis point higher return  
4 than is allowed nationally. As shown in Ex.-WPSC-Bulkley-8, based on the current 30-  
5 day average of the 30-year U.S. Treasury bond yield (i.e., 3.03 percent), the risk premium  
6 would be 7.36 percent, resulting in an estimated ROE of 10.40 percent, 43 basis points  
7 higher than the national survey. Based on the near-term (Q2 2019 – Q2 2020) projections  
8 of the 30-year U.S. Treasury bond yield (i.e., 3.52 percent), the risk premium would be  
9 7.10 percent, resulting in an estimated ROE of 10.62 percent, 44 basis points higher than  
10 the national survey. Based on longer-term (2020-2024) projections of the 30-year U.S.  
11 Treasury bond yield (i.e., 3.90 percent), the risk premium would be 6.89 percent,  
12 resulting in an estimated ROE of 10.79 percent, 45 basis points higher than the national  
13 average.

14 **Q. What did your Bond Yield Plus Risk Premium analysis reveal for your national**  
15 **survey of gas distribution utilities?**

16 A. With respect to natural gas utilities, as shown in Figure 14, I have estimated the risk  
17 premium using allowed ROEs derived from 613 natural gas utility rate case decisions  
18 from 1992 through January 2019 as reported by RRA. This equation's coefficients were  
19 also statistically significant at the 99.0% confidence level and yielded very similar results  
20 to the electric survey above.

**Figure 14: Risk Premium Results - National Gas Utility Survey**

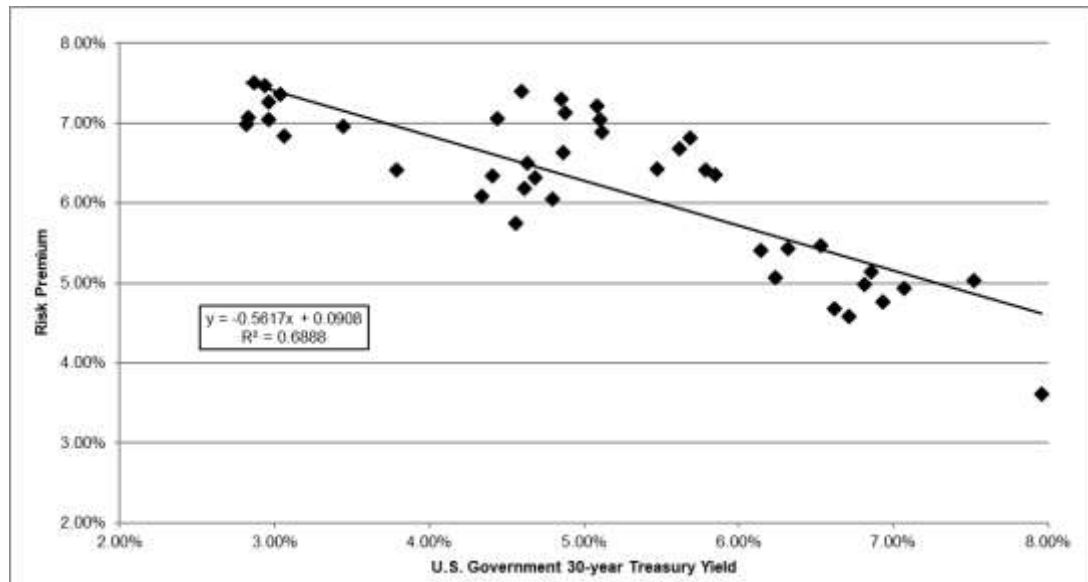


As shown in Ex.-WPSC-Bulkley-9, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 3.03 percent), the risk premium would be 6.71 percent, resulting in an estimated ROE of 9.74 percent. Based on the near-term (Q2 2019 – Q2 2020) projections of the 30-year U.S. Treasury bond yield (i.e., 3.52 percent), the risk premium would be 6.44 percent, resulting in an estimated ROE of 9.96 percent. Based on longer-term (2020-2024) projections of the 30-year U.S. Treasury bond yield (i.e., 3.90 percent), the risk premium would be 6.23 percent, resulting in an estimated ROE of 10.13 percent.

**Q. Have you performed a jurisdictionally focused Bond Yield Plus Risk Premium analysis for natural gas distribution utilities operating in the State of Wisconsin?**

**A.** Yes, I have. I conducted a similar analysis to those above using allowed ROEs derived solely from Wisconsin natural gas distribution utility rate case decisions from 1992 through January 2019; a total of 75 such cases were reported by RRA. This equation's coefficients were also statistically significant at the 99.0% confidence level.

**Figure 15: Risk Premium Results**  
**- Wisconsin Natural Gas Distribution Utility Survey**



Similar to the electric surveys, the intercept of the Wisconsin gas utility sample is 69 basis points higher than the national sample (i.e., .0908 vs. .0839), revealing that, interest rates aside, Wisconsin's natural gas distribution utilities on average are allowed a 69 basis point higher return than is allowed nationally. However, the differential is somewhat tempered by the fact that the natural gas distribution utility data shows an even greater sensitivity to interest rates, which would moderate some of the premium earned by Wisconsin utilities. As shown in Ex.-WPSC-Bulkley-10, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 3.03 percent), the risk premium would be 7.38 percent, resulting in an estimated ROE of 10.41 percent, 67 basis points higher than the national survey. Based on the near-term (Q2 2019 – Q2 2020) projections of the 30-year U.S. Treasury bond yield (i.e., 3.52 percent), the risk premium would be 7.11 percent, resulting in an estimated ROE of 10.63 percent, 67 basis points higher than the national survey. Based on longer-term (2020-2024) projections of the 30-year U.S. Treasury bond yield (i.e., 3.90 percent), the risk premium would be 6.89 percent,

1 resulting in an estimated ROE of 10.79 percent, 66 basis points higher than the national  
2 average.

3 **Q. How did the results of the Bond Yield Risk Premium inform your recommended**  
4 **ROE for the Company?**

5 A. I have considered the results of the Bond Yield Risk Premium analysis in setting my  
6 recommended ROE for Wisconsin Public Service. The results of both my CAPM and  
7 Bond Yield Risk Premium analyses provide support for my view that the DCF model is  
8 understating investors' return requirements under current market conditions. For these  
9 reasons, I have weighted the results of my Bond Yield Risk Premium analyses equally  
10 with the results of the DCF and CAPM models.

#### 11 **VIII. REGULATORY AND BUSINESS RISKS**

12 **Q. Do the median DCF and mean CAPM and Risk Premium results for the proxy**  
13 **groups, taken alone, provide an appropriate estimate of the cost of equity for**  
14 **Wisconsin Public Service?**

15 A. No. These results provide only a range of the appropriate estimate of the Company's cost  
16 of equity. There are several additional factors that must be taken into consideration when  
17 determining where the Company's cost of equity falls within the range of results. These  
18 factors, which are discussed below, should be considered with respect to their overall  
19 effect on the Company's risk profile.

1       **A. Capital Expenditures**

2       **Q.     Please summarize the Company's capital expenditure requirements.**

3       A.     The Company's current projections for 2019 through 2023 include approximately \$2,172  
4             million in capital investments for the period.<sup>67</sup> Based on the Company's net utility plant  
5             of approximately \$3,582.01 million as of December 31, 2017,<sup>68</sup> the \$2,172 million  
6             anticipated capital expenditures is approximately 60.64 percent of Wisconsin Public  
7             Service's net utility plant as of December 31, 2017.

8       **Q.     How is the Company's risk profile affected by their substantial capital expenditure**  
9             **requirements?**

10      A.     As with any utility faced with substantial capital expenditure requirements, the  
11             Company's risk profile may be adversely affected in two significant and related ways: (1)  
12             the heightened level of investment increases the risk of under recovery or delayed  
13             recovery of the invested capital; and (2) an inadequate return would put downward  
14             pressure on key credit metrics.

15      **Q.     Do credit rating agencies recognize the risks associated with elevated levels of**  
16             **capital expenditures?**

17      A.     Yes, they do. From a credit perspective, the additional pressure on cash flows associated  
18             with high levels of capital expenditures exerts corresponding pressure on credit metrics  
19             and, therefore, credit ratings. To that point, S&P explains the importance of regulatory  
20             support for large capital projects:

21                     When applicable, a jurisdiction's willingness to support large capital  
22                     projects with cash during construction is an important aspect of our  
23                     analysis. This is especially true when the project represents a major

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<sup>67</sup> Data provided by Wisconsin Public Service for Capital Expenditures 2019-2023.

<sup>68</sup> Data provided by Wisconsin Public Service.

1 addition to rate base and entails long lead times and technological  
2 risks that make it susceptible to construction delays. Broad support  
3 for all capital spending is the most credit-sustaining. Support for  
4 only specific types of capital spending, such as specific  
5 environmental projects or system integrity plans, is less so, but still  
6 favorable for creditors. Allowance of a cash return on construction  
7 work-in-progress or similar ratemaking methods historically were  
8 extraordinary measures for use in unusual circumstances, but when  
9 construction costs are rising, cash flow support could be crucial to  
10 maintain credit quality through the spending program. Even more  
11 favorable are those jurisdictions that present an opportunity for a  
12 higher return on capital projects as an incentive to investors.<sup>69</sup>

13 Therefore, to the extent that Wisconsin Public Service's rates do not permit the  
14 opportunity to recover its full cost of doing business, the Company will face increased  
15 recovery risk and thus increased pressure on its credit metrics.

16 **Q. How do Wisconsin Public Service's capital expenditure requirements compare to**  
17 **those of the proxy group companies?**

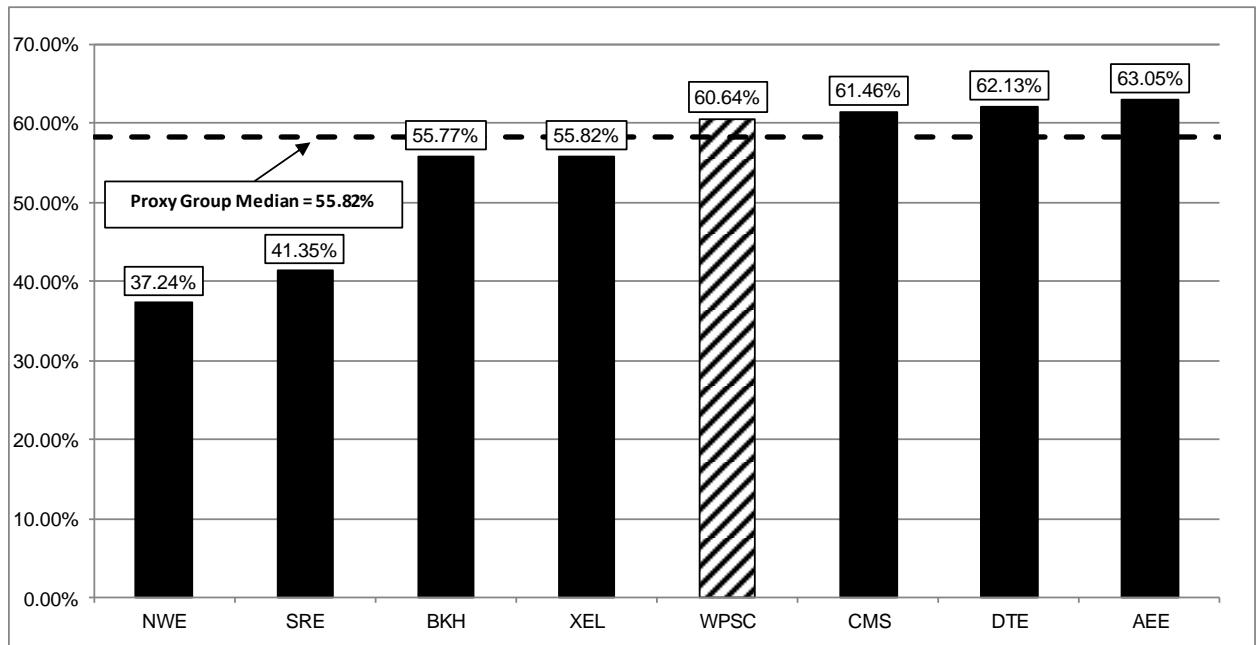
18 A. As shown in Ex.-WPSC-Bulkley-11, I calculated the ratio of expected capital  
19 expenditures to net utility plant for Wisconsin Public Service and each of the companies  
20 in the proxy group by dividing each company's projected capital expenditures for the  
21 period from 2019-2023 by its total net utility plant as of December 31, 2017. As shown in  
22 Ex.-WPSC-Bulkley-11 (*see* also Figure 16 below), Wisconsin Public Service's ratio of  
23 capital expenditures as a percentage of net utility plant of 60.64 percent is approximately  
24 1.09 times the median for the proxy group companies of 55.82 percent. This result  
25 indicates greater risk relative to the companies in the proxy group.

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<sup>69</sup> S&P, Assessing U.S. Investor-Owned Utility Regulatory Environments at 7 (Aug. 10, 2016), at 7.



**Figure 16: Comparison of Capital Expenditures of WPSC to CUPG**



**Q Does Wisconsin Public Service have a capital tracking mechanism to recover the costs associated with its capital expenditures plan between rate cases?**

A. No. Wisconsin Public Service has not requested nor received approval to recover capital investment costs between rate cases utilizing a capital tracking mechanism. Therefore, the Company depends entirely on rate case filings for capital cost recovery. However, among the proxy groups, significant capital expenditures generally receive cost recovery through infrastructure and capital trackers. As shown in Ex.-WPSC-Bulkley-12, 49 percent of the companies in the proxy group have some form of capital cost recovery mechanisms in place. Since Wisconsin Public Service does not currently have a capital tracking mechanism, its risk relative to the proxy group is significantly increased.

**Q. What are your conclusions regarding the effect of the Company's capital spending requirements on its risk profile and cost of capital?**

A. The Company's capital expenditure requirements as a percentage of net utility plant are significant and will continue over the next few years. Additionally, unlike a number of

1 the operating subsidiaries of the proxy group, Wisconsin Public Service does not have a  
2 comprehensive capital tracking mechanism to recover the Company's projected capital  
3 expenditures. Therefore, Wisconsin Public Service's significant capital expenditure plan  
4 and limited ability to recover the capital investment costs in a timely manner results in a  
5 risk profile that is greater than that of the proxy group and supports a ROE toward the  
6 higher end of the reasonable range of ROEs.

7 **B. Regulatory Risk**

8 **Q. Please explain how the regulatory environment affects investors' risk assessments.**

9 A. The ratemaking process is premised on the principle that, for investors and companies to  
10 commit the capital needed to provide safe and reliable utility service, the subject utility  
11 must have the opportunity to recover the return of, and the market-required return on,  
12 invested capital. Regulatory authorities recognize that because utility operations are  
13 capital intensive, regulatory decisions should enable the utility to attract capital at  
14 reasonable terms; doing so balances the long-term interests of investors and customers.  
15 Wisconsin Public Service is no exception. They must finance their operations and require  
16 the opportunity to earn a reasonable return on their invested capital to maintain their  
17 financial profiles. In that respect, the regulatory environment is one of the most important  
18 factors considered in both debt and equity investors' risk assessments.

19 From the perspective of debt investors, the authorized return should enable the Company  
20 to generate the cash flow needed to meet their near-term financial obligations, make the  
21 capital investments needed to maintain and expand their systems, and maintain the  
22 necessary levels of liquidity to fund unexpected events. This financial liquidity must be  
23 derived not only from internally generated funds, but also by efficient access to capital

1 markets. Moreover, because fixed income investors have many investment alternatives,  
2 even within a given market sector, the Company's financial profiles must be adequate on  
3 a relative basis to ensure their ability to attract capital under a variety of economic and  
4 financial market conditions.

5 Equity investors require that the authorized return be adequate to provide a risk-  
6 comparable return on the equity portion of the Company's capital investments. Because  
7 equity investors are the residual claimants on the Company's cash flows (which is to say  
8 that the equity return is subordinate to interest payments), they are particularly concerned  
9 with the strength of regulatory support and its effect on future cash flows.

10 **Q. Please explain how credit rating agencies consider regulatory risk in establishing a**  
11 **company's credit rating.**

12 A. Yes, both S&P and Moody's consider the overall regulatory framework in establishing  
13 credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory  
14 framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4)  
15 financial strength, liquidity and key financial metrics. Of these criteria, regulatory  
16 framework and the ability to recover costs and earn returns are each given a broad rating  
17 factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent  
18 weighting in the overall assessment of business and financial risk for regulated utilities.<sup>70</sup>

19 S&P also identifies the regulatory framework as an important factor in credit ratings for  
20 regulated utilities, stating: "One significant aspect of regulatory risk that influences credit

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<sup>70</sup> Moody's, *Rating Methodology: Regulated Electric and Gas Utilities*, at 4 (June 23, 2017).

1 quality is the regulatory environment in the jurisdictions in which a utility operates.”<sup>71</sup>

2 S&P identifies four specific factors that it uses to assess the credit implications of the  
3 regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2)  
4 tariff-setting procedures and design; (3) financial stability; and (4) regulatory  
5 independence and insulation.<sup>72</sup>

6 **Q. How does the regulatory environment in which a utility operates affect its access to**  
7 **and cost of capital?**

8 A. The regulatory environment can significantly affect both the access to, and cost of capital  
9 in several ways. First, the proportion and cost of debt capital available to utility  
10 companies are influenced by the rating agencies’ assessment of the regulatory  
11 environment. As noted by Moody’s, “[f]or rate regulated utilities, which typically operate  
12 as a monopoly, the regulatory environment and how the utility adapts to that environment  
13 are the most important credit considerations.”<sup>73</sup> Moody’s further highlighted the relevance  
14 of a stable and predictable regulatory environment to a utility’s credit quality, noting:  
15 “[b]roadly speaking, the Regulatory Framework is the foundation for how all the  
16 decisions that affect utilities are made (including the setting of rates), as well as the  
17 predictability and consistency of decision-making provided by that foundation.”<sup>74</sup>

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<sup>71</sup> S&P, *U.S. and Canadian Regulatory Jurisdictions Support Utilities’ Credit Quality—But Some More So Than Others*, at 2 (June 25, 2018).

<sup>72</sup> *Id.* at 1.

<sup>73</sup> Moody’s, *Rating Methodology: Regulated Electric and Gas Utilities*, at 6 (June 23, 2017).

<sup>74</sup> *Id.*

1   **Q.     Have you conducted any analysis of the regulatory framework in Wisconsin relative**  
2       **to the jurisdictions in which the companies in your proxy group operate?**

3   A.    Yes. I have evaluated the regulatory framework in Wisconsin on four factors that are  
4       important in terms of providing a regulated utility an opportunity to earn its authorized  
5       ROE. These are: 1) test year convention (i.e., forecast vs. historical); 2) method for  
6       determining rate base (i.e., average vs. year-end); 3) use of revenue decoupling  
7       mechanisms or other clauses that mitigate volumetric risk; and 4) prevalence of capital  
8       cost recovery between rate cases. The results of this regulatory risk assessment are shown  
9       in Ex.-WPSC-Bulkley-12 and are summarized below.

10           Test year convention: Wisconsin Public Service uses a fully forecast test year in  
11           Wisconsin which is similar to the companies in the proxy group. More  
12           specifically, 46 percent of the proxy group provide service in jurisdictions that use  
13           a fully or partially forecast test year.

14           Rate Base: The Company's rate base in Wisconsin is determined based on a  
15           thirteen-month average. However, 34 percent of the operating subsidiaries held by  
16           the proxy group are allowed to use year-end rate base, meaning that the rate base  
17           includes capital additions that occurred in the second half of the test year and is  
18           more reflective of net utility plant going forward.

19           Volumetric Risk: Wisconsin Public Service does not have protection against  
20           volumetric risk in Wisconsin, either through a revenue decoupling mechanism or  
21           a weather normalization adjustment clause. By comparison, 40 percent of the  
22           operating companies held by the proxy group have some form of protection  
23           against volumetric risk.

1           Capital Cost Recovery: As discussed above, Wisconsin Public Service does not  
2           have a capital tracking mechanism to recover capital investment costs between  
3           rate cases. However, 49 percent of the operating companies held by the proxy  
4           group have some form of capital cost recovery mechanism in place.

5   **Q.    Since Wisconsin Public Service has fewer regulatory mechanisms than the proxy**  
6           **group, do you conclude that the Company is riskier than the proxy group?**

7   A.    The Company has greater volumetric risk and greater risk around cost recovery than the  
8           proxy group companies. All else aside, this would indicate an allowed ROE toward the  
9           upper end of the range of ROE results. However, as I determined in reviewing the  
10          allowed returns for Wisconsin utilities in my risk premium analyses, discussed in Section  
11          VII, the Wisconsin utilities typically enjoy a slight premium equity return when  
12          compared to utilities nationally. So, as other utilities may have lesser risk around cost  
13          recovery, the Wisconsin utilities are provided a buffer so that they can weather such risks.  
14          This has the added advantage of providing additional credit support for the utilities which  
15          will ultimately lower debt costs. Though it may not be entirely equal, it is possible that  
16          the risks to earnings of having less automatic recovery is generally mitigated by the  
17          premium Wisconsin utilities typically earn on their equity.

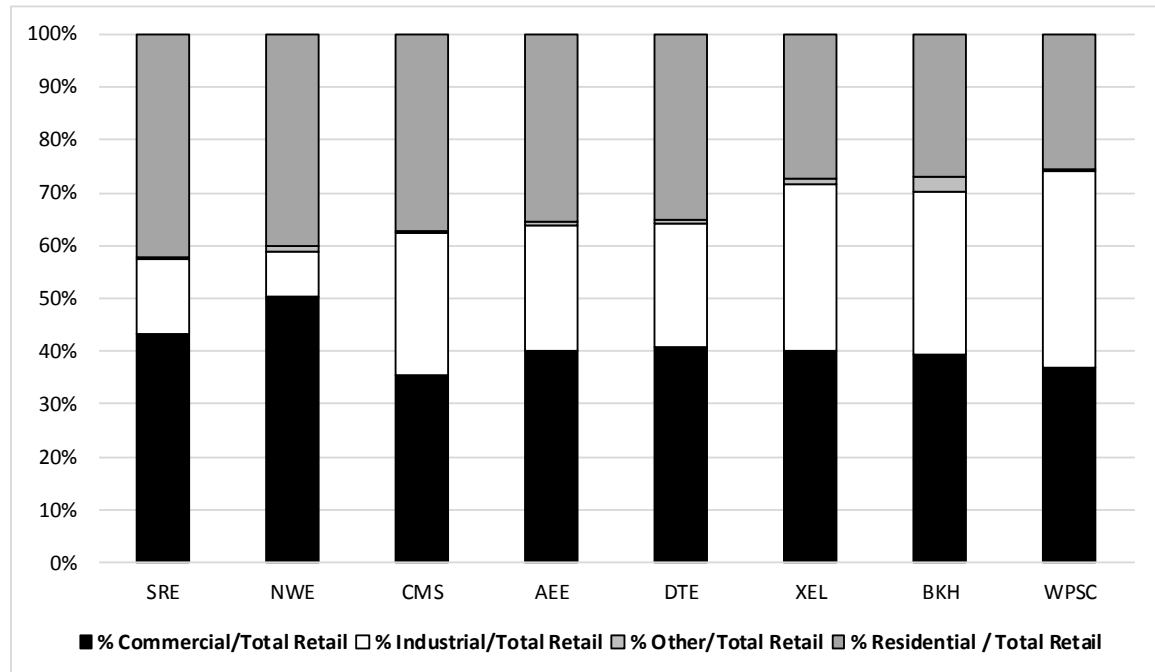
18   **C. Customer Concentration**

19   **Q.    Please summarize Wisconsin Public Service's customer concentration risk for the**  
20           **Company's electric service.**

21   A.    Approximately 37 percent of Wisconsin Public Service's 2017 total retail electric sales  
22           were derived from industrial customers, the highest percentage in the proxy group. As  
23           shown in Figure 17, Wisconsin Public Service's commercial and industrial sales volume

as a percentage of total retail electric sales was 74 percent, which is also the highest percentage in the proxy group.<sup>75</sup>

**Figure 17: Customer Concentration - Electric<sup>76</sup>**



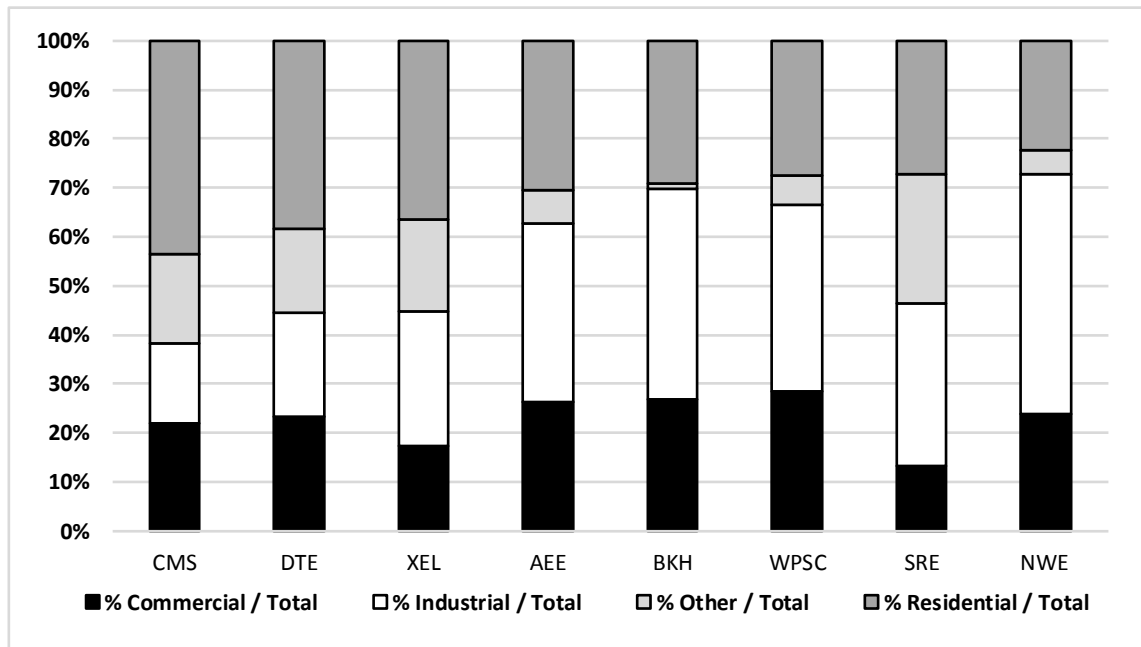
**Q. Have you performed a similar analysis for Wisconsin Public Service’s natural gas service?**

**A.** Yes. Approximately 38 percent of total company utility gas sales in 2017 were derived from industrial customers which is the third highest percentage in the CUPG. Additionally, as shown in Figure 18, approximately 73 percent of Wisconsin Public Service’s total company utility gas sales in 2017 were derived from commercial customers, industrial customers and electric power. This percentage is higher than all but two of the companies in the CUPG.

<sup>75</sup> Does not include “other” or residential customers.

<sup>76</sup> Source: SNL Financial - Other sales includes: Total Public Street and Highway Lighting, Other Sales to Public Authorities, Sales to Railroad and Railways, and Interdepartmental Sales.

**Figure 18: Customer Concentration – Natural Gas<sup>77</sup>**



**Q. How does customer concentration affect business risk?**

A. A relatively high concentration of commercial and industrial customers results in higher business risk. Since the customers are large, they can represent a significant portion of a company's sales which could be lost if a customer goes out of business or switches suppliers. As noted by Dhaliwal, Judd, Serfling and Shaikh:

Depending on a major customer for a large portion of sales can be risky for a supplier for two primary reasons. First, a supplier faces the risk of losing substantial future sales if a major customer becomes financially distressed or declares bankruptcy, switches to a different supplier, or decides to develop products internally. Consistent with this notion, Hertz et al. (2008) and Kolay et al. (2015) document negative supplier abnormal stock returns to the announcement that a major customer declares bankruptcy. Further, a customer's weak financial condition or actions could signal inherent problems about the supplier's viability to its remaining customers and lead to compounding losses in sales. Second, a supplier faces the risk of losing anticipated cash flows from being unable to collect outstanding receivables if the customer goes bankrupt. This assertion

<sup>77</sup> EIA FORM 176 - Other sales includes Electric Power (i.e., Gas used as fuel in the electric power sector) and Vehicle Fuel Volume (i.e., the quantity of fuel used by vehicles).



1 is consistent with the finding that suppliers offering customers more  
2 trade credit experience larger negative abnormal stock returns  
3 around the announcement of a customer filing for Chapter 11  
4 bankruptcy (Jorion and Zhang, 2009; Kolay et al., 2015).<sup>78</sup>

5 Therefore, a company that has a high degree of customer concentration will have greater  
6 risk than a company that derived income from a larger customer base. Furthermore, as  
7 Dhaliwal, Judd, Serfling and Shaik detail in their article, the increased risk associated  
8 with a more concentrated customer base will have the effect of increasing a company's  
9 cost of equity.<sup>79</sup>

10 **Q. Please describe how changes in economic conditions and Wisconsin Public Service's**  
11 **high degree of customer concentration can affect its business risks.**

12 A. While Wisconsin Public Service doesn't depend on any one major customer, the  
13 Company has a high concentration of industrial customers. Wisconsin Public Service's  
14 major industrial customers for both electric and gas service are engaged in manufacturing  
15 products for industries such as paper production, primary metals, food production, non-  
16 electrical machinery, fabricated metal products, lumber and wood products,  
17 transportation equipment, chemicals, textiles and apparel, and printing/publishing. The  
18 manufacturing industry is dependent on economic conditions and the business cycle.

19 **Q. How has manufacturing employment fared in recent economic conditions?**

20 A. As shown in Figure 19, total manufacturing employment in Wisconsin decreased 15.50  
21 percent from the beginning of 2007 to the end of 2009 before beginning to gradually  
22 increase in 2010 as the U.S. entered the economic recovery phase of the business cycle.

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<sup>78</sup> Dan S. Dhaliwal, J. Scott Judd, Matthew A. Serfling, and Sarah Shaikh, *Customer Concentration Risk and the Cost of Equity Capital*, SSRN Electronic Journal, at 1-2 (2016).

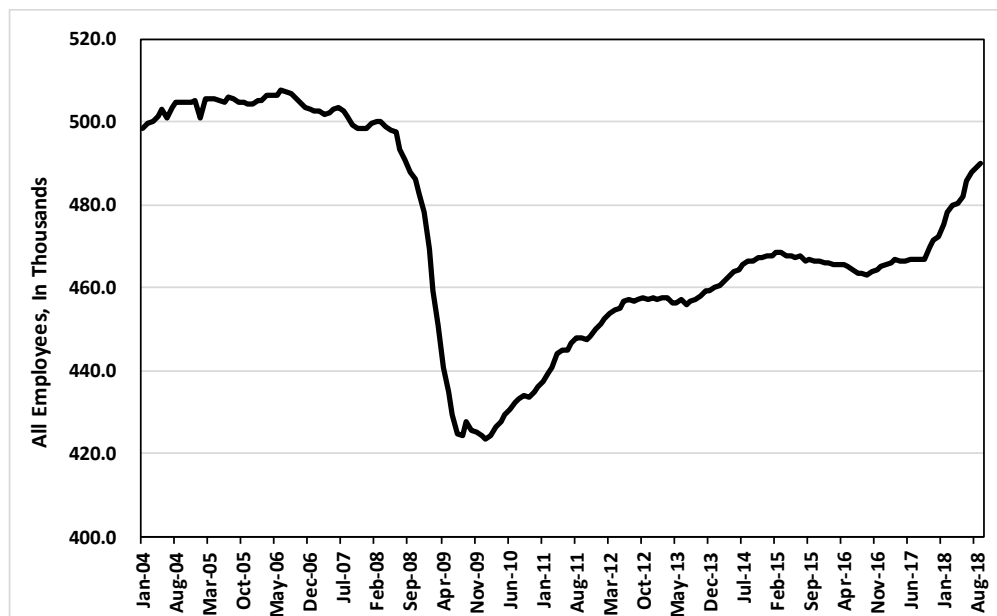
<sup>79</sup> *Id.* at 4.

However, as of September 2018, manufacturing employment in Wisconsin had still not achieved pre-recession levels.

**Q. Are Wisconsin Public Service's electric and natural gas sales dependent on the manufacturing industry?**

**A.** Yes. In 2018, less than 1.0 percent of Wisconsin Public Service's customers are large customers in manufacturing receiving electric service, representing 37 percent of Wisconsin Public Service's electric sales. Similarly, less than 1.0 percent of the Company's natural gas customers are large customers in manufacturing, representing 40 percent of Wisconsin Public Service's natural gas distribution load. Fluctuations in the business cycle could have a large impact on the electric and natural gas sales of Wisconsin Public Service. Furthermore, if manufacturing firms reduce output due to weak economic conditions, the effect could be compounded if local employment declined, reducing the sales volume for Wisconsin Public Service.

**Figure 19: Wisconsin Manufacturing Employment (Thous.)**



1 **Q. Are you aware of other risk factors that could affect Wisconsin Public Service's**  
2 **business operations?**

3 A. Wisconsin Public Service is also in direct competition with other sources of energy such  
4 as natural gas, diesel, solar and wind among others. For Wisconsin Public Service's  
5 electric service, this creates an additional risk that customers in the commercial and  
6 industrial classes could install onsite generation to serve a substantial portion of their  
7 energy needs. In the case of Wisconsin Public Service's natural gas service, depending on  
8 how competitive the price of gas is to other sources of energy, there is the risk that  
9 customers in the commercial and industrial classes could switch to an alternative energy  
10 source. Furthermore, a portion of Wisconsin Public Service's natural gas distribution load  
11 is derived from electric power sales. Natural Gas generation could face increased  
12 competition in the near and long-term from renewable generation due to various subsidies  
13 and mandates for renewable generating technologies. Thus, Wisconsin Public Service's  
14 reliance on a large percentage of commercial and industrial load results in an increased  
15 risk of volatility with respect to sales, earnings, and cash flow.

16 **Q. What is your conclusion regarding the Company's customer concentration and its**  
17 **effect on the cost of equity for Wisconsin Public Service?**

18 A. Wisconsin Public Service is heavily reliant on sales to commercial and industrial  
19 customers. As noted above, 74 percent of Wisconsin Public Service's total retail electric  
20 sales were to commercial and industrial customers, and 37 percent of sales were to  
21 industrial customers. This industrial concentration is higher than all of the proxy group  
22 companies. Similarly, Wisconsin Public Service is heavily reliant on sales to commercial  
23 and industrial customers and electric power generation for the Company's natural gas

1 service. Seventy-three percent of Wisconsin Public Service's total company utility gas  
2 sales were to commercial customers, industrial customers and electric power generation.  
3 A high degree of customer concentration increases the Company's risk related to  
4 customer migration, economic conditions or competition. Increased customer diversity  
5 decreases the effect that any one customer can have on a company's sales. Thus, the  
6 Company's heavy customer concentration in a small number of customers within the  
7 commercial and industrial rate classes implies that Wisconsin Public Service has an  
8 above average risk profile when compared to the companies in the proxy group.

#### 9 **D. Generation Ownership**

10 **Q. How does the business risk of vertically-integrated electric utilities compare to the**  
11 **business risk of other regulated utilities?**

12 A. According to Moody's, generation ownership causes vertically-integrated electric utilities  
13 to have higher business risk than either electric transmission and distribution companies,  
14 or natural gas distribution or transportation companies.<sup>80</sup> As a result of this higher  
15 business risk, integrated electric utilities typically require a higher percentage of equity in  
16 the capital structure than other electric or gas utilities.

17 **Q. Are there other risk factors specific to vertically-integrated electric utilities that the**  
18 **credit rating agencies consider when determining the credit rating of a company**  
19 **that owns generation?**

20 A. Yes. As discussed above, Moody's establishes credit ratings based on four key factors:  
21 (1) regulatory framework; (2) the ability to recover costs and earn returns; (3)  
22 diversification; and (4) financial strength, liquidity and key financial metrics. The third

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<sup>80</sup> Moody's, *Rating Methodology: Regulated Electric and Gas Utilities*, at 21-22 (June 23, 2017).

1 factor diversification, which Moody's assigns a 10.00 percent weighting in the overall  
2 assessments of a company's business risk, considers the fuel source diversity of a utility  
3 with generation. Moody's notes:

4 For utilities with electric generation, fuel source diversity can  
5 mitigate the impact (to the utility and to its rate-payers) of changes in  
6 commodity prices, hydrology and water flow, and environmental or  
7 other regulations affecting plant operations and economics. We have  
8 observed that utilities' regulatory environments are most likely to  
9 become unfavorable during periods of rapid rate increases (which  
10 are more important than absolute rate levels) and that fuel diversity  
11 leads to more stable rates over time.

12 For that reason, fuel diversity can be important even if fuel and  
13 purchased power expenses are an automatic pass-through to the  
14 utility's ratepayers. Changes in environmental, safety and other  
15 regulations have caused vulnerabilities for certain technologies and  
16 fuel sources during the past five years. These vulnerabilities have  
17 varied widely in different countries and have changed over time.<sup>81</sup>

18 **Q. Have you conducted an analysis to compare the fuel sources for the generation**  
19 **portfolio of Wisconsin Public Service to the companies in your proxy group?**

20 A. Yes, I have. Specifically, I calculated for Wisconsin Public Service and each company in  
21 the proxy group the percentage of regulated owned generation capacity that was derived  
22 from one of the following fuel sources: oil/natural gas, coal, nuclear, hydro and other.<sup>82</sup>  
23 As shown in Figure 20, approximately 50.00 percent of Wisconsin Public Service's  
24 regulated owned generation came from coal-fired power plants with approximately 91.00  
25 percent coming from either natural gas or coal-fired power plants. Therefore, Wisconsin  
26 Public Service is heavily reliant on a limited number of fuel sources for its regulated  
27 generation and overall less diversified than the companies in the proxy group.

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<sup>81</sup> *Id.* at 16.

<sup>82</sup> The other category contains regulated owned generation capacity from fuel sources such as other non-renewable generation, biomass, wind, solar, and geothermal.

**Figure 20: Regulated Owned Generation Capacity - Fuel Mix<sup>83</sup>**

Company	Oil & Natural Gas	Coal	Nuclear	Hydro	Other	Total Generation
Ameren Corporation	31.40%	49.98%	11.13%	7.32%	0.16%	100.00%
Black Hills Corporation	46.86%	53.14%	0.00%	0.00%	0.00%	100.00%
CMS Energy Corporation	51.89%	23.77%	0.00%	19.95%	4.38%	100.00%
DTE Energy Company	27.67%	52.08%	9.79%	8.51%	1.94%	100.00%
NorthWestern Corporation	24.69%	32.76%	0.00%	32.77%	9.78%	100.00%
Sempra Energy	95.88%	0.00%	0.00%	0.00%	4.12%	100.00%
Wisconsin Public Service Corporation	41.27%	50.14%	0.00%	2.87%	5.71%	100.00%
Xcel Energy Inc.	48.24%	34.46%	9.26%	2.94%	5.10%	100.00%

**Q. Has the Company developed a plan to reshape its generation portfolio over the near and long-term?**

A. Yes. WEC, Wisconsin Public Service's parent company, recently outlined a plan for reshaping its generation portfolio including retiring more than 1,800 MW of coal generation, building new natural gas generation and investing in new zero carbon generation such as solar.<sup>84</sup> More specifically, the plan includes the retirement of two of Wisconsin Public Service's coal-fired power plants (i.e., Edgewater 4 Power Plant and Pulliam Power Plant). Edgewater 4, which Wisconsin Public Service co-owned with Wisconsin Power and Light Company, was retired in September 2018 while Pulliam was retired in October 2018. Additionally, the plan includes further investment in zero carbon generation which for Wisconsin Public Service will include the purchase of 200 MW of solar generation from developers. Therefore, the plan as whole is expected to increase fuel diversity and reduce customer costs and carbon emissions.

**Q. How does the Company's generation plan affect its business risk?**

A. The Company's plan involves the retirement of existing coal-fired generation as well as investment in new generation such as more efficient natural gas power plants as well as

<sup>83</sup> Source: SNL Financial.

<sup>84</sup> WEC Energy Group, Focused on Performance, Investor Update, at 14-19 (Sept. 2018).

1 solar and wind generation. The Company's investment in new generation will require  
2 continued access to capital markets which highlights the importance of granting  
3 Wisconsin Public Service an allowed ROE and equity ratio that is sufficient to attract  
4 capital at reasonable terms.

5 **Q. What are your conclusions regarding the perceived risks of Wisconsin Public**  
6 **Service's generation portfolio?**

7 A. Wisconsin Public Service is currently relying on natural gas and coal to generate a large  
8 percentage of its electricity. In general, utilities with generation that is heavily weighted  
9 toward a limited number of fuel sources face greater risks that adverse circumstances will  
10 arise that render much of their generating capacity uneconomic. Furthermore, the  
11 Company recently outlined a plan for reshaping its generation portfolio. While the  
12 Company has enacted a plan to improve fuel diversity over the long-run, the plan will  
13 require continued access to capital markets to finance the new investments. Therefore, I  
14 conclude that Wisconsin Public Service has above average risk when compared to the  
15 proxy group as a result of its current generation portfolio and proposed generation  
16 investment plan.

17 **IX. CAPITAL STRUCTURE AND COST OF DEBT**

18 **Q. Is the capital structure of a company an important consideration in the**  
19 **determination of the appropriate ROE?**

20 A. Yes, it is. Assuming other factors equal, a higher debt ratio increases the risk to investors.  
21 For debt holders, higher debt ratios result in a greater portion of the available cash flow  
22 being required to meet debt service, thereby increasing the risk associated with the  
23 payments on debt. The result of increased risk is a higher interest rate. The incremental

1 risk of a higher debt ratio is more significant for common equity shareholders. Common  
2 shareholders are the residual claimants on the cash flow of a company. Therefore, the  
3 greater the debt service requirement, the less cash flow available for common equity  
4 holders.

5 **Q. What is Wisconsin Public Service's proposed capital structure?**

6 A. The Company's proposal is to establish a capital structure consisting of 51.46 percent  
7 common equity, 43.63 percent long-term debt, and 4.91 percent short-term debt.

8 **Q. Did you conduct any analysis to determine if this requested equity ratio was**  
9 **reasonable?**

10 A. Yes, I did. I reviewed the Company's historical actual capital structure and the capital  
11 structures of the utility operating subsidiaries of the proxy companies. Since the ROE is  
12 set based on the return that is derived from the risk-comparable proxy group, it is  
13 reasonable to look to the proxy group average capital structure to benchmark the equity  
14 ratio for the Company.

15 **Q. Please discuss your analysis of the capital structures of the proxy group companies.**

16 A. I calculated the mean proportions of common equity, long-term debt, short-term debt and  
17 preferred equity over the most recent eight quarters<sup>85</sup> for each of the companies in the  
18 proxy group at the operating subsidiary level. My analysis of the capital structures of the  
19 proxy group companies is provided in Ex.-WPSC-Bulkley-13. As shown in Ex.-WPSC-  
20 Bulkley-13, the eight-quarter average equity ratios for the proxy group at the operating  
21 utility company level ranged from 46.27 percent to 54.97 percent with an average of

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<sup>85</sup> The source data for this analysis is the operating company data provided in FERC Form 1 reports. Due to the timing of those filings, my average capital structure analysis uses the quarterly capital structures reported for the proxy group companies for the period from the fourth quarter of 2016 through the third quarter of 2018.



1 51.29 percent. In the most recent quarter (Q3 2018), the range increased to 48.36 percent  
2 to a high of 55.02 percent with a mean of 51.64 percent. Wisconsin Public Service's  
3 proposed equity ratio of 51.46 percent is reasonably close to the mean of the proxy group  
4 and well within the range established by the capital structures of the operating companies  
5 in the proxy group.

6 **Q. Are there other factors to be considered in setting the Company's capital structure?**

7 A. Yes. The credit rating agencies' response to the TCJA must also be considered when  
8 determining the equity ratio. As discussed previously in my testimony, all three rating  
9 agencies have noted that the TCJA has negative implications for utility cash flows. S&P  
10 and Fitch have specifically identified increasing the equity ratio as one approach to  
11 ensure that utilities have sufficient cash flows following the tax cuts and the loss of bonus  
12 depreciation. Furthermore, Moody's unprecedented downgrade of the rating outlook for  
13 the entire utilities sector in June 2018 stresses the importance of maintaining adequate  
14 cash flow metrics for the industry as a whole and Wisconsin Public Service in the context  
15 of this proceeding. Finally, in its recent credit opinion, Moody's downgraded WEC to  
16 Baa1 from A3 due partially to the impact on cash flows of tax reform. However,  
17 Moody's noted that the outlook for WEC is stable assuming that there are no changes in  
18 ratings of key subsidiaries and that the regulatory environments of the utility subsidiaries  
19 remain credit supportive.<sup>86</sup>

20 **Q. Is there a relationship between the equity ratio and the authorized ROE?**

21 A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility such  
22 as Wisconsin Public Service. To the extent the equity ratio is reduced, it is necessary to

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<sup>86</sup> Moody's ~~Investors Service~~, Rating Action: Moody's downgrades WEC Energy, Wisconsin Energy Capital and Integritys to Baa1 from A3; stable outlook; (July 12, 2018).

1 increase the authorized ROE to compensate investors for the greater financial risk  
2 associated with a lower equity ratio.

3 **Q. What is your conclusion with regard to Wisconsin Public Service's proposed capital**  
4 **structure?**

5 A. Considering the actual capital structures of the operating companies in the proxy group, I  
6 find Wisconsin Public Service's proposed common equity ratio of 51.46 percent to be  
7 reasonable. The proposed equity ratio is well within the range established by the capital  
8 structures of the utility operating subsidiaries of the proxy group companies. In addition,  
9 based on the cash flow concerns raised by credit rating agencies as a result of the TCJA,  
10 it is reasonable to rely on a higher equity ratio than the Company may have relied on in  
11 prior cases.

12 **Q. Have you evaluated the Company's proposed cost of long-term debt?**

13 A. Yes, I have reviewed the embedded cost of long-term debt for Wisconsin Public Service.  
14 My analysis evaluated the cost at the time of issuance in comparison with the market at  
15 that time. I used the Moody's Baa and A-rated utility bond indexes as the estimate of the  
16 market. As shown in Ex.-WPSC-Bulkley-14 that analysis indicates that the Company's  
17 embedded cost of long-term debt is reasonable.

18 **X. CONCLUSIONS AND RECOMMENDATION**

19 **Q. What is your conclusion regarding a fair ROE for Wisconsin Public Service?**

20 A. Based on the quantitative and qualitative analyses presented in my Direct Testimony, and  
21 in light of the business and financial risks of Wisconsin Public Service compared to the  
22 proxy group, and the effects of Federal tax reform on the cash flow metrics of utilities, it  
23 is my view that an ROE of 10.35 is reasonable and would fairly balance the interests of

customers and shareholders. This ROE would enable the Company to maintain its financial integrity and therefore its ability to attract capital at reasonable rates under a variety of economic and financial market conditions, while continuing to provide safe, reliable and affordable electric and natural gas utility service to customers in Wisconsin.

**Figure 21: Summary of Analytical Results for Wisconsin Public Service<sup>87</sup>**

<b>Combined Utility Proxy Group</b>			
<b>Constant Growth DCF</b>			
	Median Low	Median	Median High
30-Day Average Price	9.15%	9.86%	10.47%
90-Day Average Price	9.12%	9.83%	10.46%
180-Day Average Price	9.23%	9.94%	10.57%
<b>CAPM</b>			
	Current Risk-Free Rate (3.03%)	Q2 2019 – Q2 2020 Projected Risk-Free Rate (3.52%)	2020-2024 Projected Risk-Free Rate (3.90%)
CAPM Results	10.12%	10.32%	10.47%
<b>Bond Yield Plus Risk Premium</b>			
	Current Risk-Free Rate (3.03%)	Q2 2019 – Q2 2020 Projected Risk-Free Rate (3.52%)	2020-2024 Projected Risk-Free Rate (3.90%)
Electric rate case decisions (National)	9.97%	10.18%	10.34%
Electric rate case decisions (WI)	10.40%	10.62%	10.79%
Natural Gas rate case decisions (National)	9.74%	9.96%	10.13%
Natural Gas rate case decisions (WI)	10.41%	10.63%	10.79%

<sup>87</sup> The analytical results included in Figure 21 reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

1   **Q.    What is your conclusion with respect to Wisconsin Public Service's proposed capital**  
2       **structure?**

3    A.    My conclusion is that Wisconsin Public Service's proposal to establish a capital structure  
4       consisting of 51.46 percent common equity, 43.63 percent long-term debt, and 4.91  
5       percent short-term debt is reasonable when compared to the capital structures of the  
6       companies in the proxy group and taking in consideration the impact of the TCJA on the  
7       cash flows and therefore should be adopted.

8   **Q.    Does this conclude your Direct Testimony?**

9    A.    Yes, it does.